How can curriculum innovation help increase participation and engagement?

QCDA PROBE 4 FINAL REPORT

UNIVERSITY OF WOLVERHAMPTON

School of Education

4 Copthall House,

Station Square

Coventry CV1 2FL

☎ +44 (024) 7652 4036

Contents

Introduction

This probe is the fourth in a series designed to illustrate and explore practice surrounding curriculum development in context. On this occasion we focus on how teachers in four secondary schools, who are planning and enacting curriculum innovations, are able effectively to design curriculum experiences that promote student engagement and participation.

The schools involved in the study were chosen because they were successfully tackling a range of inclusion challenges at a whole-school level, that is student attainment was high and/or improving. Our focus in this research probe, however, was not on whole-school approaches to inclusion, but on the detail of curriculum experiences designed to engage students and encourage and support them to participate, and how teachers were planning and enacting these. This report describes the close study of classroom practice; we have therefore also briefly set out in the school profiles descriptions of whole-school approaches and each school's particular inclusion challenges.

The report is in five sections. In Section 1 a short description of each secondary school is followed by an overview of the school's approach to promoting students' engagement and participation through curriculum development. Section 2 offers an analysis and synthesis of the effective practices across the four schools. In Section 3 we offer some conclusions based on our synthesis and explore connections with the wider research evidence, and in Section 4 we suggest some implications for policy and for practice. Finally, Section 5 describes our method and includes references, full case studies of the four schools and technical appendices.

Section 1: The schools and their approaches to student participation and engagement

Bedlingtonshire Community High School

Bedlingtonshire Community High School is an average-sized community school. It 'serves a large area including the town of Bedlington and the surrounding area' and the students come from a variety of social-economic backgrounds but 'with significant pockets of deprivation' (Ofsted report, 2008). The school is proud of its achievements and successes. It holds Technology College status, Investors in People status as well as the Schools Curriculum Award. The school aims are to:

- prepare students to be independent lifelong learners and to be successful and positive members of society

- promote creativity, confidence and determination

- encourage students to have high expectations

- develop self esteem and mutual respect

- show that if we are positive we can achieve more.

The school's approach to the curriculum

The school aims to match 'learning to need'. It continually develops and offers a wide range of learning opportunities to consider and address students' needs, interests, varying levels of prior attainment and learning styles. Not all students in the same year will work at the same pace; therefore a flexible 'personalised' programme is available to all students across year 9 to year 13.

This curriculum is built around a core of essential life skills that includes literacy, numeracy, information and communication technology (ICT), teamwork and presentation skills, citizenship and ethical topics.

Following appropriate guidance, students can choose additional courses that may be accredited (for example engineering, health and social care, leisure and tourism, ICT) to ensure that they all have the opportunity to achieve their 'personal best'.

Curriculum innovation includes the Knowledge Transfer Partnership (KTP)[1] project, which focuses on the development of habits of mind, enquiry skills and enterprise education. The head teacher does not want to introduce too many new initiatives, but wants to focus on the enquiry approach, which is seen as a long-term initiative.

The school's approach to securing participation and engagement

Thinking skills and enquiry-based learning are seen as vehicles for creating autonomous learners and raising the aspirations of all students at the school. KTP, an enquiry and thinking skills based project, is being developed in the school in partnership with the University of Newcastle. A KTP associate manages the day-to-day running of the project and serves as a link between the school and the university.

The project started with a small group made up of a cross-section of practitioners (teachers of core subjects, heads of department, senior leaders), but it is now moving to whole-school level.

Staff have introduced and trialled enquiry-based lessons with the year 7 students, often planned and taught in pairs. In these lessons the teachers 'stand back' more and allow the students greater independence and autonomy – they are encouraged to find out answers, rather than just be 'spoon fed'. Introducing a 'toolkit for enquiry' (described in detail in Section 2.4) and appointing and training student researchers further supported the development of the thinking skills and enquiry-based approach to teaching and learning in Bedlington.

Bridgemary Community Sports College

Bridgemary is a smaller than average college in a deprived area of Gosport, Hampshire. The college has an above average number of students with learning difficulties; 'the majority of students enter the college with below average attainment and about half need significant help with reading' (Ofsted report, 2008). The inspectors highlighted the improvements which had happened in the school in recent years and noted the staff's commitment to 'introducing initiatives to extend student opportunities and horizons, and to personalise programmes of

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[1] Knowledge Transfer Partnerships (KTPs) is a nationally-funded government programme that enables organisations and businesses to access cutting-edge expertise, in this instance at Newcastle University. www.ktp.ncl.ac.uk/Pages/default.aspx/.

learning that motivated and engaged them in education relevant to their needs' (Ofsted report, 2008).

The school's approach to the curriculum

The school believes that the aim of the curriculum is to enable young people to become:

- successful learners – who enjoy learning, make progress and achieve

- confident individuals – who are able to live safe, healthy and fulfilled lives

- responsible citizens – who make a positive contribution to society.

The school senior leadership team (SLT) describes the process of development and curriculum innovation that has been happening at school in recent years as moving away from the 'default settings' characterised by limited challenge and flexibility within the curriculum, weak teaching, low expectations (partly determined by 'generational deprivation' of the local community), poor relationships with parents/guardians/carers and community. Some of the recent curriculum developments in Bridgemary include:

- 'shopping basket' curriculum at key stage 4

- vertical mentor groups which replaced traditional tutor groups

- vertical learning groups in core subjects across key stage 3

- expansion of vertical learning opportunities to non-core subjects.

Vertical ('stage not age') curriculum structures established in Bridgemary allow learners to move through the curriculum according to their progress. A learning path is designed and timetabled for each student. Young people 'take national tests when they are ready to do so, rather than at the conventional time' (Ofsted report, 2008).

The school's approach to securing participation and engagement

Highlighting the rationale behind the curriculum innovations, and linking them to student participation and engagement, the head teacher explained, 'We came up with a simple model. It has students at the centre'. Rather than punishing learners (for example for non-attendance) the school tries to build on the positives, offering them support and working around their needs and lifestyles.

Bridgemary teachers and members of the SLT emphasised that participation and engagement referred to all learners, meeting their needs and helping them to achieve their full potential. The school's continuing professional development (CPD) leader noted:

> *'All children matter... and they need to be included in the institution. A school has to try hard to change itself to support the learning of individual students. A school has to tailor its organisation, goals, and ways of doing things to the particular individual needs of particular individual students.'*

The head teacher highlighted that she trusts her staff in to use their knowledge of students (for example using cognitive abilities test (CAT)[2] and achievement data), to plan their development in each subject area and to be responsible for differentiating teaching and learning accordingly. So, different approaches seemed to be adopted by different departments and individual teachers. For example, within whole-school curriculum development initiatives ('stage not age', flexibility and choice of pathways and qualifications available, cross-curricular schemes of work), which contribute to inclusion, we observed a number of ways in which different subject teachers at Bridgemary engaged students in their lessons:

- effective use of teacher questioning skills to enable dialogic[3] learning during whole-class interactive teaching (English)

- enquiry-based learning (science)

- using social and emotional aspects of learning (SEAL) – emotionally engaging children to make learning relevant to them.

Norbury Manor Business and Enterprise College for Girls

Norbury Manor Business and Enterprise College for Girls is located in Thornton Heath on the border between South London and North Croydon. It has over 1,000 students, a high proportion of whom are from minority ethnic backgrounds and it was categorised as an outstanding school

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[2] The cognitive abilities test (CAT) is an assessment of a range of reasoning skills. The test looks at reasoning with three types of symbols: words, numbers and shapes or figures. It tests verbal, quantitative and non-verbal reasoning.

[3] With roots in philosophy, dialogic learning involves the construction of understanding and meaning through discussion and debate – dialogue – metaphorically between different ideas and perspectives and/or literally between different people. see Wegerif, R. (2006).Dialogic Education: what is it and why do we need it?. *Education Review 19*(2), 58-67.

in its last Ofsted report in 2007. The inclusion challenge facing the school is exemplified by the fact that in September 2009 students will join the school from 58 feeder primary schools.

The school's approach to the curriculum

The school is developing a range of policies and initiatives which are intended to meet its objective of 'removing the barriers to learning' and broadening its approach to the curriculum, such as thinking skills, SEAL, creativity and deep learning.

The school's emphasis on deep learning was described by the deputy head as a way of synthesising and rationalising the broad range of curriculum initiatives across the school. Deep learning, which takes the form of 12 deep learning days during the school year, was identified as a way of developing higher thinking skills over more sustained periods of time and fostering independent learning. This allowed the school to 'focus on skills and taking [students] out of subjects', often through taking them out of school on enterprise projects, and concentrating on encouraging creativity and challenging students of all abilities. Activities included visits to a farm, city firms and museums, and 'take your daughter to work day'. Building partnerships and providing learning opportunities in this way were intended to deepen learning and learning relationships among students, staff and external organisations.

Other initiatives such as thinking skills have been developed over the last few years and integrated into curriculum planning throughout the school. Work has begun on linking the learning outcomes for personal, learning and thinking skills (PLTS) with those for SEAL and Every Child Matters (ECM) to ensure maximum impact for any development.

The school's approach to securing participation and engagement

The school has worked on SEAL, emotional literacy and wellbeing with Antidote,[4] an organisation that works with schools and other bodies to promote emotional literacy as a means of enhancing learning, and this forms the basis of its approach to securing participation and engagement. Staff interviewed emphasised the value of 'knowing children well', of fostering independent learning and creating a 'tolerant community'. Staff and students approved of the 'massive support' and 'extensive safety net' available to students, exemplified by the school's mentor system. Mentors are non-teaching staff who offer pastoral support to vulnerable

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[4] www.antidote.org.uk/.

students and help to reintegrate them into the school. The school's lead mentor emphasised the importance of building students' social and communication skills to enable them to participate fully in school and reduce their dependence on mentors. Mentors also have a mediating role, negotiating with teachers on behalf of students and ensuring they have a private space in which to engage with learning.

There is also a student observer scheme in school. Students are selected to be trained as observers of trainee or newly qualified teachers and given advice about how to give feedback. Some of the benefits that participating students had gained from their involvement in the scheme are discussed in the impact section below. In addition, the school has a student voice mechanism, which is run by the head girl's team and open to all students who want to participate. It was felt that the electoral models common in many schools were divisive.

St Thomas More RC High School

St Thomas More is an 11–18 mixed comprehensive serving the Catholic population of North Tyneside. The school has a specialist status in mathematics and computing and was rated as outstanding in its latest Ofsted report (2007). The school has seven feeder primary schools. The catchment area provides the school with a well-balanced, 'genuinely comprehensive' intake and there are approximately 1,700 students on the roll, including 340 post-16 students (school website data).

The school's approach to the curriculum

The curriculum has been designed to be as inclusive as possible in order to maximise achievement. The head teacher feels the success of this is demonstrated by the school's results. All groups of students (boys, girls, students with special educational needs, second language learners) achieve above the national average on the key stage 2 to 4 progress measures.

The head teacher believes that the key to the success of the school is the personalisation [5] of the curriculum. The school does not target particular groups but looks at the needs of each child and where his or her interests and abilities lie. In year 9 the school then tries to accommodate student curriculum choices. They offer flexible 'pools' of choices to enable the students to study those subjects they are 'good at' and which 'particularly interest' them (year 9 curriculum choice booklet). The school believes that if students are studying things that interest them, they are more likely to achieve.

The class sizes are very small, particularly in the classes for lower attainers, which often only have 16 students. Learners' progress is monitored closely, and the curriculum is modified or changed, for example to include more vocational elements.

The school's approach to securing participation and engagement

St Thomas More is a Catholic school that aims to:

- be a community based on Christian values, notably love, justice, peace, truth and tolerance, and to encourage individuals in their commitment to these ideals

- provide a secure, welcoming and ordered environment in which individuals learn to value and respect both themselves and others

- give individuals the opportunities to develop their full potential as human beings, and to encourage and challenge them to do so

- encourage everyone to strive to do their best and to strive for the highest standards in all areas of activity

- help children to grow into confident, open, resourceful young people with a sense of responsibility and of service

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[5] Christine Gilbert's (2007) definition of personalisation is the most widely accepted: Taking a highly structured and responsive approach to each child's and young person's learning, in order that all are able to progress, achieve and participate. It means strengthening the link between learning and teaching by engaging pupils – and their parents – as partners in learning.

See http://nationalstrategies.standards.dcsf.gov.uk/personalisedlearning/

- every child is considered to be precious and the challenge is for the school to do their best for them.

Evidence obtained by the research team shows that the continual development and appraisal of teaching methods and strategies employed by teaching staff in order to engage all students is a high priority within the school.

Teaching staff at St Thomas More are encouraged to adopt a wide range of teaching styles and strategies in order to successfully engage the students and to achieve exam success.

Teachers across all the subject areas include open-ended/problem-solving activities in their schemes of work where the students work together in groups in order to complete a task. The tasks encourage the students to use the knowledge and skills that they have developed in previous lessons and apply them to practical real-life situations. These tasks frequently take place over a series of lessons.

Students in the school are not streamed, but are put into sets in each subject according to their prior attainment. The underlying rationale is the belief that it is ideologically demotivating to stream a student, for example to put them in a top/bottom set for every subject just because they are in the top/bottom set for mathematics. Rather a student is 'set' on the basis of his or her performance in each subject area.

Section 2: Increasing student participation and engagement: emerging themes and common approaches

In this section we explore and connect examples of practice in the four case study schools where teachers were successful in securing participation and engagement.

2.1 Connecting learning with the real world

Staff focusing on participation and engagement in the four case study schools believed that it was important to make explicit for students the connection between learning in school and their lives outside of school in order to make school seem more relevant and interesting to them; to design a 'relevant and engaging curriculum' (senior leader, Bedlingtonshire Community High School). This was especially important to teachers when they were planning curriculum experiences for students who were already, or were deemed to be, at risk of becoming disengaged from learning.

> *'I find that the students respond particularly well to things that they have heard about, that are topical and not in a dusty textbook... I feel that I let students down if I don't find the way that works for them and engages them.'* (teacher, Bridgemary Community Sports College).

In designing curriculum experiences to encourage such students to participate, teachers created opportunities for students to make frequent conceptual and practical connections between learning in school and the 'real world' outside of school. They did this in five distinctive ways:

1. by using models of interaction from popular culture, in particular mainstream television programmes

   For example, we saw a French lesson based on *The Apprentice* in St Thomas More RC High School and a science lesson based on *Brainiac* in Bedlingtonshire.

2. by referring to current affairs and issues receiving media coverage

   For example, in Bridgemary, we saw young people evaluating articles about the swine flu pandemic in science, and in English, students collected and discussed articles covering the European elections in a series of lessons about 'Britishness'. As well as using media to link learning to students' lives outside school, teachers were also encouraging young

people to be reflective and critical about what they read in the press and to seek alternative perspectives and to challenge their own perceptions and preconceived ideas.

3. by activating students' own recent experiences, opinions, likes and dislikes in general terms

    This approach was used frequently as a lesson starter, to engage students from the outset of the lesson. For example, in a geography lesson in Bedlingtonshire, the teacher asked students to bring in some food packaging from home and to discuss in groups what they had eaten the previous day as a way of introducing the topic of food miles.

4. by getting to know students as individuals and connecting with them on a personal level, teachers used that knowledge to shape both content and teaching and learning approaches

    For example, in Bridgemary, students brought in family photos to structure a discussion about heritage in an English lesson. Another English teacher explained her approach:

    'One girl was not engaging with Jane Eyre, so we had quite a few long conversations about her life outside school and I discovered she was interested in the paranormal. So I asked her to look at the novel from that point of view.' (teacher, Bridgemary)

    Another teacher in Bridgemary recognised her students' affinity with both technology and popular music and designed a task that involved choosing a piece of music to complement a poem and explaining their choice in a podcast.

5. by providing additional activities that create 'real world' experiences for students

    For example, at Norbury Manor Business and Enterprise College for Girls, 'deep learning' is a programme of 12 'deep learning days' during the school year. The programme is intended to develop higher level thinking skills, foster independent learning, encourage creativity and challenge students of all abilities over sustained periods of time. Activities include visits to a farm; city firms; museums and 'take your daughter to work day'.

Overcoming barriers to student participation

Teachers designing curriculum experiences that make explicit connections between learning in school and the real world of students' lives felt they were taking a calculated risk. Such

experiences could only be effective if the students took up the opportunity to participate and came forward to offer their own perceptions of, for example, the dangers of swine flu or their enthusiasm for music. Teachers associated the risk that students might not do so with emotional barriers such as students feeling vulnerable about sharing their feelings or not trusting that the classroom environment was a safe enough place to share their ideas and experiences.

We saw two examples of different ways in which teachers mitigated these risks for themselves and for students and in doing so created a climate of security in which teachers felt students were more likely to volunteer feelings, ideas and experiences, so that they could participate fully in the lesson.

In the first example, a history teacher at Bridgemary used empathy and disclosure to make herself vulnerable in order to encourage her students to do the same. She talked about how she disclosed her own feelings and experiences as a black woman of mixed heritage to encourage an all-white year 7 class to actively participate in a series of lessons about slavery. The same teacher also found that using images seemed to be a particularly helpful way of surfacing and exploring students' powerful and often conflicting (in this context, racist) feelings so that they could share these safely and constructively. By activating and engaging students' emotional responses to her as an individual and encouraging them to articulate their feelings and ideas about race in their everyday lives, she was able to connect the students with the history of slavery in a way that was more relevant and interesting for them than might otherwise have been achieved, given the cultural heritage of the students.

In the second example, a drama teacher at Norbury Manor explained how important she believed respect and trust between the students to be in helping students to feel safe about connecting to feelings and experiences outside school. In a year 7 drama lesson, she used dramatised arguments to explore problem solving and a range of SEAL goals, including empathy, empowerment and restorative approaches. Arguments were likely to be a common experience for all the students on which they could draw for their performance. At the same time there was a risk that for some students arguments were more emotionally challenging than for others and that these students could choose not to participate if they did not feel safe to do so.

The lesson began with a quick game in which students, standing in a circle, had to perform something for a few seconds in turn. Next the students moved into self-selected groups of two or three. They were then asked to mime an argument with one another. Using mime meant that

the mood remained fairly light-hearted. For the next activity, students were allowed to select a partner to work with, as the teacher felt that a trusted partner and feeling safe were important if the students were to tackle potentially sensitive areas. Using their voices this time, students were asked to draw on their own experience and to act out an argument, although the teacher was careful to suggest that they should not focus on a recent or unresolved issue. Five pairs acted out their arguments to the class as a whole. After each argument, the class was asked to comment on how to resolve the conflict and the teacher emphasised that this audience role, listening to and observing the action and empathising with the protagonists, was at least as important to the lesson as the performances.

In this way, the teacher encouraged all students to participate and she did so by planning opportunities for learners to activate their own feelings and experiences to create or evaluate a dramatic performance. At the same time she created a range of opportunities for students to manage their own emotional response to the lesson by:

- modelling a safe way to engage through mime, which also created an opportunity for students to find out how they felt about participating

- offering them choices about who they worked with, what role they took and assigning equal value to each role.

The teacher felt that this last element of choice was important to creating a sense of security: 'You've got to find a balance between telling them what to do and giving them the freedom to do what works for them'.

Knowing that many students enjoy using computers outside school, teachers often included opportunities for students to use technology for presenting work and accessing the internet for research purposes when designing curriculum experiences. Outside of the classroom, the use of laptops and ICT-based homework tasks that could be emailed to the teacher on completion were frequently cited tactics that teachers used to increase the likelihood of homework being finished on time and to a good standard.

For example, students at St Thomas More were able to access a learning portal from home and contact their teachers and peers. Lessons and projects available included activities where the teacher interacted with the students via email. Each lesson plan on the learning portal included activities for those with special educational needs.

2.2 Enquiry-based learning

Teachers in all four case study schools were designing curriculum experiences that sought to engage students through enquiry-based learning and through opportunities to solve problems.

> *'...[enquiry] gets the students more involved; they move at their own pace, they enjoy it more.'* (teacher, Bridgemary Community College)

Enquiry-based learning is an approach in which teachers design curriculum experiences that support students to devise questions to investigate and strategies to test, in order to find solutions and tackle problems. Rooted in the work of John Dewey,[6] this learner-centred process shares common features with constructivist learning advocated by Vygotsky[7] and later developed by Bruner.[8] In enquiry-based learning, teachers lead learning and development by providing challenges that link what the child knows and can do already to new curriculum experiences.

In Bedlingtonshire, enquiry-based learning has been established and embedded as a whole-school focus over a period of time. As part of a research project linked to the University of Newcastle, pairs of teachers planned and trialled enquiry lessons with year 7 students. In enquiry lessons the teachers 'stand back' more and allow the students greater independence and autonomy. Students are encouraged to find out answers, rather than being 'spoon fed'. To begin with, some students struggled to respond positively to their new, more active role in enquiry lessons (the following is an excerpt from a student interview, Bedlingtonshire):

> *'The first ...[enquiry] I had was in science... he gave us equipment to make an electric magnet and he goes, "right I want you to go and experiment with it and we'll come back and have a discussion about what we found out....who's done it the right way and more possible ways to do it".'*

When the teacher gave you the work like this, what were you thinking at the time?

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[6] General Teaching Council (2007) *Experience and reflection in and on action: How do they help learning?* RfT. London: GTC. Accessible at: www.gtce.org.uk/teachers/rft/reflection0507/.

[7] GTC (2003) *Social interaction as a means of constructing learning: The impact of Lev Vygotsky's ideas on teaching and learning.* RfT. London: GTC. Accessible at: www.gtce.org.uk/teachers/rft/vygotsky1203/.

[8] GTC (2006) Enquiry-based learning, cognitive acceleration and the spiral curriculum: Jerome Bruner's constructivist view of teaching and learning. RfT. London: GTC. Accessible at: www.gtce.org.uk/teachers/rft/bruner0506/.

'Well we didn't really understand it that much because we'd never done it before and we were thinking "Why haven't we been told what to do? Why are we being sent off to do something we've never done?"... it was the start of a new project so we didn't know anything about them... what we were going to be doing.'

If you didn't understand it, how did you know what to do?

'...Mainly trial and error... on the things we thought would work'.

'…If you don't succeed at first – try again...'.

To tackle this, alongside a set of activities, the teachers developed a toolkit of resources to support enquiry processes, which students learned to use, so that they could choose and deploy them independently during an enquiry lesson. Another important dimension of the enquiry lessons in Bedlingtonshire was a set of explicit learning skills and behaviours that teachers and students use and which the school calls 'habits of mind'. Habits of mind provided a vocabulary to help teachers and students talk about what and how they had learned, which students in other schools noted was an important feature too.

We observed an example of an enquiry lesson in geography. Students worked in groups to answer the question, 'How do the foods we choose to eat affect the environment?' Information sources were provided at five stations around the room and students rotated around the stations during the lesson. Each group produced a mind map setting out their ideas and at the end of the lesson these were peer assessed by the students using assessment criteria provided by the teacher.

In St Thomas More School, year 8 students worked together in groups during a mathematics lesson to determine the optimum selling price of tickets to a competition, in order to make enough money to run the competition. To complete the task the students had to use fractions, percentages and algebra; they did not receive any guidance about which mathematics operations they needed to use and when. The teacher found that tackling a 'longer' problem, that is one sufficiently complex to sustain an entire lesson, encouraged conversations between students about mathematics which were not usually features of more traditional lessons: 'I've learnt lots of stuff and how to use mathematical words to communicate' (student, St Thomas More RC High School).

In Bridgemary, students in a science lesson on friction started by answering the question, 'What sports activities need you to get a good grip?'. Students then worked in groups to plan an enquiry investigating friction. First they mapped their ideas using sticky notes on a prepared writing frame. They were encouraged to think about the equipment and resources they would use, how they would record their data, what might go wrong, etc. Resources for the enquiry were provided at a central resource station; some of the resources were relevant for experimenting with friction and others were not and students had to make informed choices about which resources would help them with their enquiries.

Students as researchers and observers

We discovered one important complementary whole-school process that seemed to support participation and engagement generally and enquiry-based approaches in particular: it was the training of students as researchers or observers of teaching and learning.

In Bedlingtonshire, each year a cohort of students learn to become researchers and use their skills in a range of school improvement projects. For example, student researchers work alongside teachers to evaluate learning using 'learner view' observation schedules. Student researchers were described as 'agents' in the enquiry classrooms. The explicit development of their enquiry skills and their special insight into the planning and rationale of the lesson enabled them to be an 'expert' in the classroom and to model effective enquiry techniques for their peers, as well as helping the teacher to reflect on the success of the lesson.

In Norbury Manor, student observers attend the lessons of, and provide their feedback to, recently qualified teachers. Students told us that they felt that being involved in the school in this way made them more confident in general and developed qualities such as respect, tact, impartiality, reliability and trust (student focus group). It enabled them to take a more critical stance towards learning and teaching but also gave them a new, deeper perspective on the teaching process and how to feed back to others sensitively.

In Bridgemary, a team of deputy subject leaders is made up of students who collect their peers' perceptions about teaching and learning in each of the curriculum areas, observe lessons and generally work with the heads of departments and the SLT. If students have any issues in a particular lesson or subject, they discuss it with the deputy curriculum leaders:

> *'Our students are very forthcoming and good at vocalising their opinion. So they would come and tell me whether they thought a lesson was interesting, challenging, useful or not.'*
> (teacher, Bridgemary)

2.3 The skilled use of questions to create an engaging learning environment

Whole-class teaching was observed in all the four case study schools. This approach seemed to be effective in engaging young people in their learning when teachers used questions in sophisticated ways to deepen and develop learners' thinking and understanding, and when they created a learning environment where students were respected and safe, and yet constantly challenged by their teachers.

In Bridgemary we observed some skilful questioning in a fast-paced year 9 English lesson organised around a whole-class discussion about a poem written in the 17th century. The teacher was concerned that students would find this kind of material difficult to relate to and used interactive whole-class teaching and exploratory talk with the students to continuously engage them and maintain their interest in the poem. During the lesson 60% of students volunteered contributions and the remainder were involved through teacher questioning aimed at developing understanding and securing the participation of all learners. The teacher described her questioning strategy thus:

- ask only open questions

- make sure everybody participates

- know the core content that needs to be covered

- ask challenging questions that are in the zone of proximal development[9]

- keep asking questions until both you and the students find the discussion interesting.

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[9] The 'zone of proximal development' according to Lev Vygotsky (2003) is a way of thinking about the next steps that a learner can take with help, that they would be unable to take alone. It is a theory that informs the practice of 'scaffolding' learning. See GTC (2003) Social interaction as a means of constructing learning: The impact of Lev Vygotsky's ideas on teaching and learning. RfT. London: GTC. Accessible at: www.gtce.org.uk/teachers/rft/vygotsky1203/

Some examples of the questions the teacher used during the lesson were:

- *'What's her motivation for doing that?'* (open)

- *'"Enticing" is a really unusual choice of word. Why did you use it?'* (probing)

- *'What attracted you to choosing this poem?'* (process)

- *'Why would you want to behave in such a way? Why would she want to?'* (speculative)

By continuously engaging the students the teacher was able to manage the levels of both participation and challenge to ensure that all students were learning effectively.

In another example, this time in Bedlingtonshire, a mathematics teacher used the learning objectives of the lesson as a springboard for using questioning to engage students from the outset. We learned about this example in a student focus group:

Student 1: He put three pictures on the board and said 'what do you think the lesson is going to be about?'. He liked everybody's answer and wrote them all on the board. There was one that was the main one but they were all right.

Student 2: We haven't had that in our lesson. That sounds a lot more fun. Ours was boring.

2.4 Using tools, protocols and frameworks to model and structure participation

In Bedlingtonshire and Bridgemary teachers were using a number of tools and protocols to encourage student participation and engagement. For example, mind maps were used:

- to summarise students' starting points at the beginning of lessons, often as an outcome of pair work or whole class discussion

- to highlight particularly relevant points

- to add new ideas, concepts and links.

Lesson patterns, frameworks and enquiry planning tools were perceived by teachers as crucial to the success of enquiry-based learning.

In Bridgemary the science department had developed an enquiry framework that teachers and students found helpful. The framework structured enquiry by prompting students to respond to a set of questions/statements:

- I'm trying to find out...

- I need the following equipment...

- My equipment will be set up like this...

- I'm going to change (independent variable)...

- I'm going to keep the same (controlled variable)...

- I will measure its effect on (dependent variable)...

- What could go wrong?

- How will I record my data? (design your table here)...

- What is the best way to display your data to see a pattern?

The framework has been used consistently over time and it has become a protocol that we observed students using confidently and independently to plan and undertake an enquiry.

In Bedlingtonshire a 'toolkit for enquiry', developed in partnership with the University of Newcastle, was used by teachers in their enquiry lessons in order to engage learners and develop their thinking. The activities within the toolkit included:

- a questioning tool intended to encourage thinking by supporting both students and teachers to develop their own probing questions. The tool is designed to be used as a lesson starter to discover prior knowledge and/or to create links across different areas of the curriculum

- a diamond ranking tool intended to support students in analysing and evaluating evidence, helping them to prioritise among different items and make good judgements. This tool could be used to identify the most important aspects of themes or issues and/or to estimate the likelihood of a range of possible outcomes.

2.5 Using variety to create multiple points of entry into and different ways of engaging with curriculum

One of the striking features of the curriculum experiences that we saw across the four schools was the variety of approaches that teachers used within and across lessons. This deliberate strategy was informed by teachers' awareness of students' prior knowledge, skills and learning behaviours. Teachers offered students a range of opportunities and choices of when and how to participate

A senior leader explained that the school encouraged teachers to 'cater for all children by incorporating interesting topics to engage everyone. We need to continually evaluate the interest level of students' (senior leader, St Thomas More).

Students elsewhere confirmed the importance of variety for maintaining their levels of interest: 'There's got to be choice and change. It would be boring if you would be doing the same thing' (student, Bedlingtonshire).

Teachers seemed to achieve this by designing choice and freedom into curriculum experiences:

'In science recently, we could pick our own experiment – what we wanted to do – and find the science behind it as long as it was safe. The teacher just set us off and watched us and gave us help if we needed it. We had someone with a wild imagination in our group so we were experimenting with a deodorant can to act as a flame thrower or finding out whether a watermelon could save a mobile phone if you threw it off a building' (student, Bedlingtonshire).

This included offering choices in methods of teacher assessment:

'I am very fortunate to teach a subject where it's possible to look at skills through a variety of different media. So I can say "I am going to assess your ability to engage with Shakespeare, but I'm going to do it either through speaking or through writing." And depending on what I know of the students, I can tailor what I am asking of them' (teacher, Bridgemary).

Teachers were supported in their efforts to tailor curriculum experiences so that they could engage students through close collaboration and intelligence networks within and across departments, through which they shared knowledge about, and experiences with, different children. For example, in St Thomas More, teachers communicate by email to discuss friendship issues or family bereavement. Students with special needs are the subject of regular meetings at Bedlingtonshire. Norbury Manor employs learning mentors who work with students

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and teachers to provide 'massive support' and a 'safety net' by identifying which students need help in different contexts. In Bridgemary, where students are taught according to their ability rather than their age, teachers share and discuss their interpretation of cognitive ability test (CATS) results and other attainment data. They also felt able to ask for help from colleagues:

'If I'm struggling to engage a student I'd have a word with my colleagues. He might be good at PE or have well-developed leadership qualities. I would discuss what might be interesting for the student or what teaching and learning approach might work best for him' (teacher, Bridgemary).

Support also came in the form of structured student feedback, which schools gathered and analysed systematically, and which was used to inform curriculum design. We heard of one example where a topic was dropped and teachers quickly changed tack on the basis of feedback from students that indicated that they were failing to engage them with the approach. Norbury Manor, Bridgemary and Bedlingtonshire, as noted earlier in this report, all train students to observe lessons. These students then offer feedback to their teachers on the quality of learning they have observed, which the teachers find invaluable.

Section 3: Conclusions and some connections to research evidence about participation and engagement

In the four case study schools we found that interventions that focused on and appeared to be successful in securing participation and engagement shared six important features:

1. Relevance
2. Activity
3. Opportunities to develop skills
4. Complementary whole school initiatives
5. Dialogue
6. A variety of approaches

Relevance

Staff and students believed that in order to be engaging, curriculum experiences needed to be relevant to students' lives. Staff used a range of approaches to help students connect curriculum experiences in school with 'real world' experiences outside of school. Students valued, and staff were designing, curriculum experiences which sought to engage students through the relevance both of what they learned and how they learned it.

Activity

Curriculum experiences that involved students taking an active role in their own learning, in particular as enquirers or problem solvers, were considered by staff and students to be more: challenging, interesting and engaging.

Opportunities to develop skills

In order for students to feel confident to participate in and benefit from this kind of curriculum experience, staff prepared them in two ways: teaching them skills they needed to undertake enquiry, and designing and modelling the use of tools and frameworks to structure students' engagement with the curriculum and with each other.

Complementary whole school initiatives

Skills for enquiry-based learning were complemented and enhanced by whole-school student participation initiatives such as students as researchers and student observers, where students learned how to formulate good enquiry questions, the value of evidence and how to collect and

analyse it effectively. Having students with these skills in groups as enquiry experts or 'agents' meant that staff had an additional resource in the room, enabling them to be more confident that enquiries would be conducted effectively and learning outcomes achieved.

Staff used dialogue with students in a whole-class setting to secure all students' participation in curriculum experiences. They achieved this with the skilled use of questions and discussion to promote interest and provoke different kinds of responses from individual students. Staff associated student interest with the focus of a question or comment (that is, whether they were likely to care about the subject) and the level of challenge of the question or comment.

A variety of approaches

Staff recognised that no one approach, however engaging, would work for everyone and that to be confident of securing participation from all students, schools needed to develop a range of approaches from which staff could choose in order to offer a mixed diet of curriculum experiences. Variety in entry or starting points, learning processes and outcomes was considered important by staff and valued by students. Opportunities for students to choose from a range of options seemed to be an important feature of this.

It seems almost too simple to conclude that in order to engage students and to encourage and support them to participate in curriculum experiences, teachers planned curriculum experiences that required students to be engaged and to participate. Nevertheless that is what these findings suggest, that in these four schools, teachers who were successful in engaging students did so by designing, carefully and in detail, different kinds of curriculum experiences, but then stepped back, both enabling and requiring students to enact them.

An understanding that active learning is more interesting, challenging and engaging is fundamental to understanding these schools' success in securing participation. Students involved in participatory research[10] identified four factors that switch students off learning. They were:

- too much emphasis on written work: learners across all key stages, but particularly boys, said they did not enjoy writing

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[10] Flutter, J.; Rudduck, J. (2004) *Consulting pupils: What's in it for schools?* London: Routledge Falmer.

- disruptive behaviour: sometimes students were disruptive because they were bored and their attention was not focused on learning and there was a danger that disengaged students' behaviour led others to switch off learning because of the risk of disruption

- needing help, but not getting it: waiting for help or resources caused some students to engage in disruptive behaviour because they felt bored or frustrated

- repetitious, 'easy' and mundane activities: activities such as completing worksheets and working from textbooks and activities that involved little physical movement.

The enquiry-based and interactive whole-class approaches that these schools preferred were almost the opposite of these. There was some written work but it was undertaken in groups; it was purposeful and highly structured. Group work and direct interaction with the teacher made it less likely that students would be bored and disruptive. Students were provided with all the resources they might need for their enquiry and, in some cases, identifying which would be most helpful was part of their learning. Finally, physical movement was built in through visits to resources stations and the activity involved in conducting enquiry, in particular scientific investigation.

Further evidence comes from a 2005 systematic literature review[11] exploring student perspectives on motivation to learn. The review found that students believed they were better motivated when curriculum experiences:

- were perceived as fun

- were varied and participative

- involved collaboration

- included activities that were useful and authentic.

Staff took time to discover students' interests and backgrounds and used this knowledge to inform and fine tune the design of curriculum experiences, so that students would see them as relevant to their lives. Staff developed content that students would recognise and invited them to

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[11] Smith, C., et al. (2005) A systematic review of what pupils aged 11–16 believe impacts on their motivation to learn in the classroom. London: EPPI-Centre Social Science Research Unit, Institute of Education, University of London.

use learning tools and methods such as ICT and peer relationships that they knew were important to students. For many secondary aged students, engagement with learning is linked to their perception of the kinds of knowledge that are required for life in the world outside school. Students have reported that topics which are relevant to 'real-life' situations help make them seem more interesting.[12]

In other research, students suggested that their learning experiences could be enhanced if tasks were more closely aligned with the social worlds in which they lived – both inside and outside the classroom. They said they found it helpful when teachers used materials, objects and images with which they were already familiar. Where tasks were contextualised in these ways, students reported that they led to memorable and meaningful learning experiences.[13]

Relevance, contextualisation and connection to the real world also featured as findings in the systematic review of research evidence about curriculum innovation and its effects that was completed by the Centre for the Use of Research and Evidence in Education (CUREE) in 2008 as part of the 'Building the evidence base' project. In the review, itself a meta analysis of research reviews, learning that is 'context-based'[14] and/or connected to the home or community lives of students was found to be a feature of effective curriculum experiences.[15]

The review also set out evidence that might help to explain our third finding; that structuring students' engagement through the use of tools and protocols was important in the case study schools. The review found that 'only when teachers provide clear guidance for groups to follow, tasks to undertake and activities that help students develop the skills to work collaboratively do collaboration and group work have benefits for students'.[16] Staff in the case study schools modelled the behaviours and language that students needed to successfully enact curriculum experiences, so that they were made consistent and routinised through the use of familiar tools and protocols, thus building students' confidence and collaborative working skills.

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[12] ibid

[13] Arnot, M. *et al* (2003) *Consultation in the classroom: Developing dialogue about teaching and learning* Cambridge: Pearson Publishing.

[14] Context based learning deals with ideas and phenomena in real or simulated practical simulations.

[15] Bell, M. et al. (2008) QCA Building the evidence base. Review of individual studies from systematic research reviews. CUREE QCA.

[16] ibid

In addition to classroom-based approaches, the schools involved in this study told us that providing opportunities for students to be trained to develop the enquiry skills they need to be active learners made an important contribution to the extent of engagement and participation. One of the ways in which schools achieved this was through whole-school participation initiatives. Research about student voice and participation[17] has demonstrated the value of 'students as researchers' approaches and similar initiatives for students' academic achievement, as in these case studies. Such approaches also appear to have wider outcomes linked to the way that being involved in initiatives like this can change students' perceptions of their role in the organisation of the school. Students have reported:

- **a positive sense of self-worth**: students described the pleasures of participating in purposeful, challenging activities, addressing issues that they felt were important, and having an impact on how things were done at school

- **developing enquiring minds and learning new skills**: student researchers acquired academic skills (such as devising questionnaires, analysing documents and interpreting data), became more confident communicators (because they were required to speak in public to different audiences) and developed civic skills (such as drawing up an agenda, taking minutes and chairing meetings)

- **improved social competences and new relationships**: student research projects often involved getting to know students of different ages and abilities, understanding their perspectives, and valuing what they offered. Students also often formed new bonds with their teachers, and by working with them in a different way came to perceive them differently

- **learning to reflect on their own learning**: the students developed a greater sense of control over their own learning, and increased confidence in talking about it and how to improve it.

These wider outcomes might be as important as the academic outcomes for thinking about engagement and participation because students' confidence in their skills might be at least as important in their decision to participate in enquiry-based curriculum experiences as their actual

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[17] Fielding, M.; Bragg, S. (2003) *Students as researchers: Making a difference.* Cambridge: Pearson Publishing.

skill level. Being part of school-wide projects that recognise and value their perspective and their contribution seems likely to boost their confidence and encourage them to practise their skills more, which in turn makes it more likely that their skills will improve.

Teachers in the case study schools used dialogue to engage students and to stimulate and evaluate learning. Research about dialogic[18] learning provides some clues as to why teachers in the case study schools found this to be such a powerful way to engage students. When taking part in effective dialogue, which involved exploring, questioning and investigating ideas, students are required to think carefully about the way that they use words to express themselves and their ideas. Students see and hear the way in which they and their perspectives relate to others and the way that others relate to them. This managed exposure of learning relationships has been shown to lead to students being more open to alternative ways of seeing and thinking and to the development of a more exploratory approach to learning. Connections between this kind of openness have been made with improved thinking and reasoning skills, higher levels of creativity and improvements in students' skills for learning to learn.[19]

Much of the dialogue was structured around effective questioning techniques, which teachers were skilled in using. Research on the use of questions[20] suggests that effective questions are a vital part of classroom interaction and serve multiple purposes. Teachers use questioning for:

- assessing students' existing knowledge

- reviewing learning

- improving student participation in the lesson

- asking students to articulate their reasoning

- generating ideas

- promoting thinking and problem solving

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[18] The processes of encouraging extended chains of questioning as coherent shared enquiry (Alexander, 2006).

[19] Wegerif, R. (2005). Reason and creativity in classroom dialogues. *Language and Education.* 19(3), pp. 223–228.

[20] Myhill, D. et al. (2006) Talking, listening, learning: effective talk in the primary classroom. Maidenhead: Open University Press.

- differentiating by directing specific questions to certain students.

The teachers we worked with in the case study schools valued and used whole-class discussion for all of these purposes. They told us that this kind of dialogue helped them to use the knowledge they had about the students' interests to 'find an angle' on the range and content that would help students make connections with the curriculum, and we have discussed earlier in this report why this might be important. The other opportunity that whole-class discussion seemed to offer teachers was a chance to manage the level of challenge to meet different students' needs. A systematic literature review[21] conducted by CUREE in 2009 as part of the 'Building the evidence base' project focused on how teachers construct challenge in curriculum learning experiences. Challenge in this context means designing teaching and learning to elicit from students their best efforts (that is, challenge needs to be motivating) and to enable them to think and act in ways that are transferable and/or discipline specific; and which are progressively more complex, critical, creative and independent.

Staff used whole-class discussion to make judgements that enabled them to pitch and fine tune the level of challenge for different students within the group in the wider curriculum experience, as well as within the immediate discussion. The review[22] found that to differentiate levels of challenge accurately, staff needed to be able to:

- diagnose students' starting points in relation to knowledge and skills

- know when they can step back from an authoritative, instructional role in order to devolve aspects of choice and responsibility to the students

- set appropriate targets

- create a balance between support and challenge

- prioritise and juggle resources to target different students' needs.

Staff in the case study schools were able to do these things efficiently and accurately by engaging each student in ways that informed their design of curriculum experiences for these

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[21] CUREE/QCA (2009) Building the evidence base: Strand 3 challenge review report. London: QCA.

[22] ibid

students in the longer term. Interestingly, the review also found that where teachers were using this approach, their response in terms of the curriculum experiences they designed to sustain challenge tended to be characterised by group work, independent learning, enquiry and collaborative problem solving.[23] These correspond closely with the curriculum experiences in the case study schools that staff we worked with created for their students.

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[23] ibid

Section 4: Implications for policy and practice

The outcomes of this probe indicate the importance of teachers' use of curriculum resources in securing students' participation and engagement:

- within classrooms to support enquiry based approaches

- across the whole school in students as researchers or similar enquiry based initiatives.

Teachers may need additional support in order to:

- accurately diagnose learners' interests, relevant prior learning and starting points in order to find points of connection and to determine an appropriate level of challenge

- design curriculum experiences that require learners actively to participate, for example by dividing up roles and allocating learning resources

- develop tasks within such curriculum experiences that involve learners in experimentation, investigation, discovery and handling and evaluating evidence

- offer a range of choices to learners about how they take part

- connect in-school learning with the outside world of current affairs, popular culture and the 'real lives' of learners to make learning feel relevant.

Other findings point to the importance of staff having high-level knowledge and skills in creating curriculum experiences that include effective dialogue. The knowledge and skills required include:

- how to build a positive learning environment within which learners feel safe to offer ideas and suggestions and to experiment with new ideas

- how to organise group work so that all learners have opportunities to speak and to listen

- the effective use of different forms of questions to encourage and support all learners to participate in whole-class interactive sessions.

Section 5: Method, references and technical appendices

Purpose and aims of the research

Within the 'Building the evidence base' project[24] probes are designed to provide detailed analysis and understanding of the processes involved in curriculum change. Probes set out to:

- locate effective curriculum innovations with specific foci

- describe in detail their component activities and processes and their outcomes

- identify what might be significant about the context within which they take place.

By triangulating the evidence gathered across the different sites of practice and referring to the wider research evidence base, probes then explore what might make the practice effective and offer tentative suggestions about ways that QCDA could support schools and practitioners to develop effective practice of their own.

There are significant implications with this approach for how probe research projects are set up and managed. For example, the project team needs to make sure that not only does effective practice in the specified area exist, but that it will stand up to detailed scrutiny and that in-depth questioning and feedback will be welcomed by and supportive of the practitioners involved. Scoping is therefore detailed and in depth and involves, for example, documentary analysis of recent Ofsted reports and advice from specialists in the field to complement school leaders' perceptions of the security of relevant practice.

Because of the rigors of this selection process and because probes involve working in depth and detail and within a defined resource, a small number of schools, usually three or four, are involved. Obviously there is no opportunity to cast such a small group as a sample that is in any way representative of schools generally. However, we have tried to ensure a sufficiently diverse range of contexts and practices so that themes and issues emerging from the research have the potential for application elsewhere.

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[24] www.qcda.gov.uk/17558.aspx/.

Designing a probe methodology – and some limitations to the approach

Methods for each probe are individually tailored to suit the focus and the context of the specific research project. However, there are some underlying principles and characteristics that remain stable within an overall approach. Our methods have had to address two key challenges.

The first is that the curriculum, as conceived by the secondary curriculum reform programme, is a complex entity. The research methods therefore needed to target evidence about a wide-ranging and dynamically interacting set of variables,

Secondly, secondary schools in England are currently intensely involved in policy-led curriculum and organisational reform. Researching practice in this context makes serious demands on schools' confidence in navigating their way through these reforms and exposing for scrutiny their development work. It also makes extensive practical demands on already scarce time and resources. Recruitment to the research and participation therefore had to be managed in ways that paid close attention to the impact of the research on the development of the schools, their staff and their learners.

In year 2, probes have taken the form of multi-site, multi-method 'co-constructed' case studies; co-constructed in that, as well as gathering data through traditional approaches such as interviews, observation, and survey, the research team has worked alongside key practitioners to support them to investigate their own and/or their colleagues' practice and learner perceptions about the effects of their interventions. Practitioner contributions to the enquiry have involved them in leading focus groups of staff and students and in gathering and analysing documentary evidence, for example school policy documents and student work. As well as helping to secure better access than an 'outside' researcher might otherwise expect, participation in the research process is helpful for managing a quite demanding (of the school) relationship and has been organised so as to offer a professional learning opportunity for the practitioner(s) taking part. Encouraging and modelling student participation in research was also designed into the process to build capacity in the schools and is one way of 'paying in kind' for the time and access that schools contribute to the research process.

The range of methods and resulting diverse data sets create an opportunity to understand in a short period of time the complexity of effective practice and how it plays out in context. By triangulating school leader, practitioner and student perspectives with evidence collected from policy documents and attainment data and observations gathered using video, probe research

can start to do justice to the interaction between behaviours and beliefs and espoused and actual practice.

There is a clear need to stabilise the diversity in the evidence with enough consistency in how data are collected and presented to enable the research team to read across from one site to another to identify common themes and approaches. This has been achieved by the deployment of common methods using tools and protocols that have provided enough structure to enquiry processes to secure comparative data from the range of contexts. Core questions for interviews, protocols for collecting and analysing video evidence and the use of a shared set of enquiry questions, core definitions and analytic framework have been important here.

There are, of course, limitations to this approach. Evidence gathered by practitioners needed to be analysed and interpreted separately from the more traditionally collected data set. There were also opportunity costs in terms of the time. The resources invested in training and development in methods for practitioners could alternatively have been spent in observation and interviews. And with only four schools, research probes make no claims to generalisability.

Nevertheless, the probe team has managed, in this project, to assemble a wide range of interesting evidence and to infer through disciplined analysis and close working with the public knowledge base, some clues and suggestions that might explain effective practice in ways that might be useful to QCDA in its work with schools and practitioners.

Setting up the project

Our starting point was an exploration of the research evidence concerning inclusion, student engagement and participation. We were guided in this by Professor David Leat who acted as a specialist adviser to our research team. Referring to the research evidence and supported by Professor Leat, we identified core aspects of practice that it would be possible to explore in a multi-site, multi-methods case study. From this process we produced:

- a concept map setting out the core aspects of practice that the literature and our scoping activities indicated we should investigate

- a set of enquiry questions to guide our evidence collection and analysis processes.

Both documents are included as Appendices 1 and 2 to this report. The colour coding indicates the connections between the core aspects of practice and the enquiry questions.

Using the enquiry questions, we developed a straightforward database, set up as a spreadsheet, which we used to summarise and map the evidence collected in each of the schools. Copies of all items referred to in the database were also collected and coded for inclusion on 'knowledge tree', the 'building the evidence base' project archive in order to enable text-based searching and to feed into cumulative analysis between probes and between research strands during the final year of the project.

Selecting case study schools

In choosing schools we looked for sites where there was both visible curriculum development and consistent attention to increasing student engagement and participation. With only four schools involved, we needed to be confident of diversity and security of practice in both aspects of the research.

We selected the long list of possible case study schools based on our knowledge about development work in relation to inclusion and curriculum design. This included, for example, contacting school, university and research networks or following up involvement of schools with the project specialist adviser and a number of other inclusion-related networks and organisations. Apart from being rich and diverse in their curriculum development and student engagement approaches, the criteria we considered for short listing our four case study schools included:

- established or developing practice of impact monitoring, data collection and attention to evidence within a school

- an interest in teacher research and enquiry

- involvement of young people in developing their learning and curriculum through a range of learner voice structures

- broad range and scope of the curriculum developments aimed at increasing student participation within a school

- potential value of the project for the school's own development.

We wanted to select a range of schools to illustrate different sizes of development in designing the curriculum for increasing student engagement and participation. Therefore, schools were also scoped for diversity of context, socio-economic background, Ofsted rating and attainment.

Each of the short-listed schools was sent a project brief, describing the project aims and scope, explaining how it would work and what the benefits for any participating school might be. We discussed the project aims and processes with the selected schools to explore any ethical issues and to ensure there was clarity with our expectations of each other. A final selection of four schools was made on the basis of these discussions.

Developing research instruments

We used the outcomes of the analysis of the research studies and reports about engaging young people in their learning, mentioned above, to create a concept map and a framework for developing tools and instruments to support research in the four case study schools. The concept map and the enquiry questions that form the basis for the analytic framework and research instruments are attached as Appendices 1 and 2 to this report.

The framework was then used to create a simple database for accumulating and coding evidence from a range of sources, enabling us to read across to find patterns and gaps in the data. The sources of evidence we included were:

- interviews with participating teachers

- interviews with school senior and middle leaders

- student voice and perceptions data

- observation (including video) data

- school documentation relating to inclusion and curriculum development policy and practice.

Evidence from each of the sources mentioned above was collected in all participating schools.

To ensure that evidence generated through this probe is compatible with the overall project data set, the research team has used the glossary of terms developed by the 'Building the evidence base' team at CUREE and the University of Wolverhampton during year 1 of the project. The glossary has been updated with a number of new terms relevant for this research probe, which are attached as Appendix 3.

Case study visits

During the initial visit to the case study schools our researchers had a preliminary conversation with the staff about the project (its aims, methodology, how it would fit with what the schools were doing already) and established the areas of practice they would explore further in each of the schools. Following the first visit to the schools, the researchers completed a short report for each of the case study sites which was used for the initial analysis and mapping of the data.

In each of the schools, the research project was run as a co-constructed case study in which practitioners and students participated in the overall enquiry. Following the initial visit, the researchers worked with the school colleagues to develop a plan for collecting the evidence which had the practitioners tackling one or two questions which were most interesting from both their personal and their school's perspective. Similarly, school practitioners and researchers discussed how to involve students in the project and which of the enquiry questions would be best answered by them. The researchers and their school colleagues had an opportunity to select from a range of possible methods, supported by relevant tools and protocols. Methods used most frequently during the enquiry included:

- semi-structured interviews with the members of school SLT and individual practitioners

- group interviews with teachers, including those to identify and discuss beliefs and values in relevant areas or to reconstruct the timeline of how a specific approach has been developed in the school

- stimulated recall using video evidence of classroom practice with audio commentary

- observations of practice

- student shadowing

- group interviews with students using 'game show' activities based on evidence gathered from teachers

- student questionnaires

- documentary analysis, for example policy and supporting documents, guidance materials, student work, lesson plans and schemes of work.

Researchers also made between two and four visits to the case study schools over the period of March–July 2009 to collect data directly. The outcomes of the visits were written up in the form of four standardised case studies, which were validated by the schools and are attached as Appendix 4 to this report.

Analysis

Evidence collected through the researcher, teacher enquiry and student voice strands of the research project in each of the case study schools was coded using the glossary, the concept map and the analytic framework developed during the conceptual and definitional stages of the project.

Once the data had been entered into a spreadsheet database, common practices, issues and themes were then read across the data set. These results were then tested against the full research evidence to explore key patterns and possible explanations for how and why things worked. The results of these processes form the basis of the conclusions of this report.

A series of tentative possible implications for policy and practice were inferred from the conclusions. These have yet to be tested with policy or practitioner groups.

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Appendix 1

Concept map

about learning

about inclusion, participation & engagement

about the curriculum

Beliefs & Values

Resources

Diagnosing learning need

Curriculum planning

Teaching

Designing activities

Classroom arrangements

Relationships

Inclusion: Participation and engagement

PPA time, learning support

Enablers & drivers

SLT support

CPD

Learning

Exposure to Ideas

Teacher assessment

Student perceptions
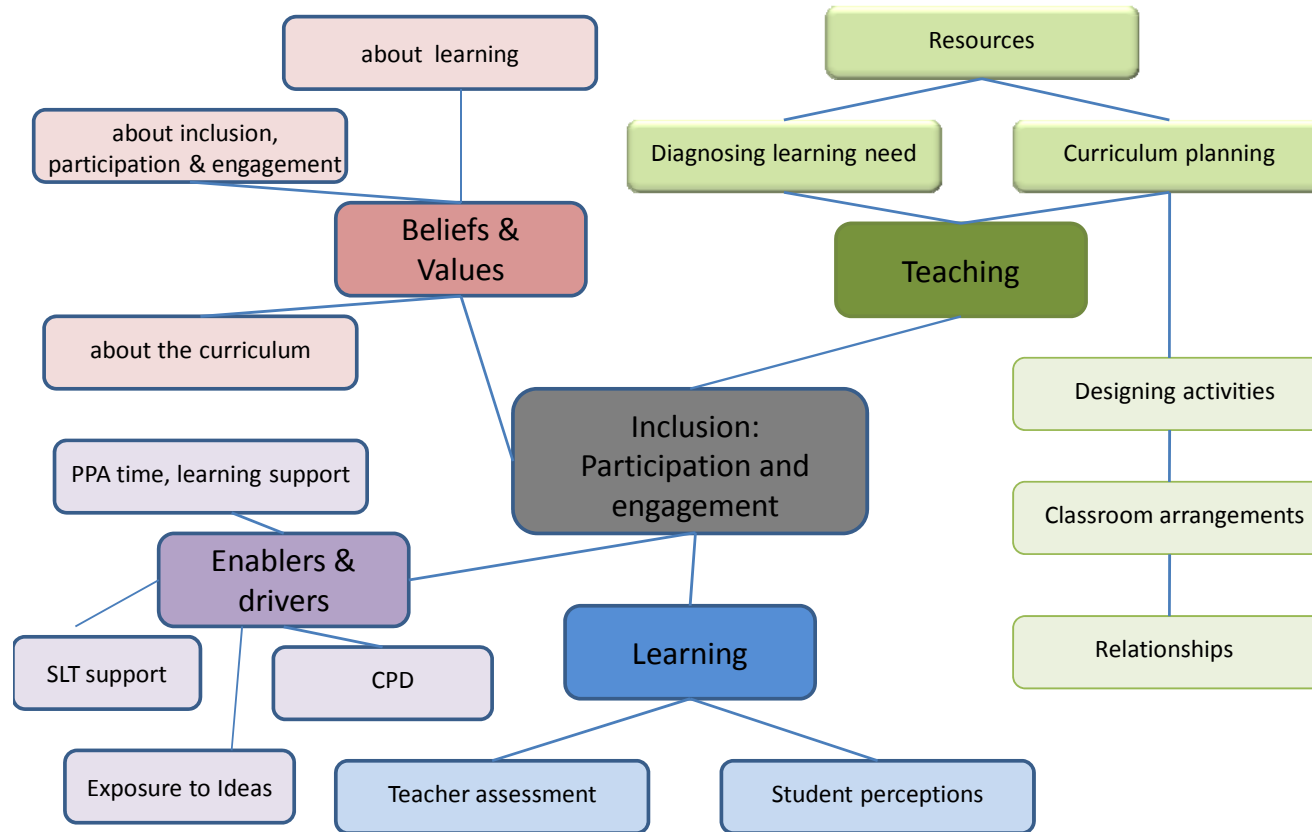
Appendix 2

Enquiry questions

Teaching					Learning	
	Curriculum planning					
Diagnosing learning need	Designing activities	Classroom arrangements	Relationships	Resources	Teacher assessment	Student participation
1 How did the teacher identify a suitable focus for the lesson/scheme?	7 Describe the lesson/scheme activities	10 What did the teacher take into account when planning how the class would interact, eg how groups were put together, how the class would be arranged etc	14 What demands did the learning activities place on relationships between the teacher and the students?	17 Describe the resources used during the lesson/scheme	22 What learning goals did the teacher set before the lesson/scheme began? To what extent were these individualised?	27 How did the teacher monitor student participation?
2 Describe the focus for the lesson/scheme.	8 Describe the pedagogic approach(es) that the teacher used.	11 Describe the classroom arrangements	15 What demands did the learning activities place on relationships student to student?	18 How did the teacher use evidence about learning needs and interests to inform the development of resources?	23 How did the teacher evaluate the progress of individual students during the lesson/scheme? What evidence was collected and how was it used during the lesson?	28 Describe any variation in 'patterns' of student participation, eg were there any activities in which some students seemed to be more or less involved? How did participation vary across the group?
3 What did the teacher do to find out what students knew and could do already that was relevant to the lesson/scheme?	9 How did the evidence about learning needs and interests influence the pedagogic approach(es) that the teacher decided upon for the lesson/scheme?	12 What training or preparation did the students need to be able to participate in the learning activities?	16 What strategies did the teacher use to manage relationships with and between students during the lesson/scheme?	19 How were the resources deployed during the lesson/scheme?	24 Describe the range of learning goals, assessed by the teacher, achieved by individual students and by the class as a whole. To what extent were the learning objectives for the lesson/scheme met?	29 Where there was evidence of wide participation in some activities, what were the characteristics of those activities?
4 What role did students play in identifying their learning needs?		13 What guidance did the teacher provide about participation throughout the lesson?		20 How were the resources evaluated during and/or after the lesson/scheme?	25 What changes, if any, were made to the lesson/scheme plan as a result of teacher assessment during or after the lesson/scheme?	30 What were students' perceptions of the extent of their participation and engagement?
5 What opportunities were there for students to make relevant connections with learning and interests outside of school?				21 What changes, if any, were made to the resources as a result of teacher assessment during or after the lesson/scheme?	26 Include any evidence of assessment, eg examples of student work.	31 What did students understand their learning goals to be? Were they the same goals as those identified by the teacher?
6 How did the teacher use insights into students' learning needs to inform lesson/scheme planning?						32 Which activities did students find more and less engaging and why?
						33 What were students' perceptions of the extent to which their learning goals were met?

34 How successful do students think the lesson/scheme was in helping to make progress?

Beliefs and values		Enablers and drivers		
About inclusion	About the curriculum	CPD	PPA, Learning Support	Other
35 What is the school policy on and approach to participation and engagement? What explicit policy documents exist and what do they say?	39 What, if any, models or theories about curriculum exist in the school?	41 What development opportunities exist for teachers to discuss, design and plan curriculum collaboratively?	44 To what extent do teachers share information about the learning needs of different students?	47 Describe any significant features of the school environment that supported or inhibited the development of the lesson/scheme.
36 To what extent did the school policy on or approaches to participation and engagement influence the design and implementation of the lesson/scheme?	40 Describe any other explicit curriculum development work that is ongoing in the school.	42 How do teachers evaluate the success of curriculum development? What evidence do they collect and analyse about how curriculum change impacts on student learning?	45 What was the role of learning support assistants in designing planning, supporting and/or evaluating the lesson/scheme?	
37 How is the term 'inclusion' understood by: school leaders, teachers, students? What is the range of working definitions 'live' in the school?		43 How does teacher learning about curriculum fit within the overall professional development programme and/ or priorities of the school?	46 What time is made available to teachers for planning and refining lessons/schemes and resources?	
38 How do teachers conceptualise challenge? To what extent do their concepts change for different groups of students e.g. by gender, ethnicity, age, perceived ability?				

Appendix 3

Glossary (new terms)

Curriculum development and innovation: learning experiences and outcomes specified, planned and realised in order to take account of evidence and information about effective learning processes and opportunities from elsewhere. Examples include thematic approach to the curriculum, flexible use of curriculum times, alternative curriculum pathways, developing students' learning skills.

Inclusion: designing learning experiences and contexts that use each student's existing knowledge, understanding, aspirations and values as a springboard for extending their learning, self-efficacy and achievement through engaging in meaningful ways with ideas and develop the skills, knowledge and understanding needed to be successful learners, confident individuals and responsible citizens.

Engagement: participating or being involved.

Appendix 4

Individual school reports

Bedlingtonshire Community High School

A meeting was held with the head teacher and the deputy head. This meeting provided the research team with information about the Knowledge Transfer Partnership (KTP) project underway in the school, focusing particularly on the reasons why the project was undertaken.

One member of the research team from Newcastle University spent the morning shadowing a year 7 student. This involved attending registration with the student and observing four lessons, one of which was an 'enquiry' lesson. The morning provided valuable insight into the atmosphere in the school, the relationships between the staff and students and how an 'enquiry' lesson works in practice.

Thirteen members of staff who are involved in the KTP project were interviewed as part of the evaluation of the KTP project by Newcastle University. This has provided rich data with regard to how the project has evolved, how teachers have responded to it and the support that is required in order for such an innovative curriculum to be put in place.

Three focus group interviews took place with year 7, 8 and 9 students (four students in each group). The students discussed their views about their lessons, how they felt about their enquiry lessons and they described particular ones that they enjoyed.

Twelve year 7, 8 and 9 students filled in pupil views' templates (PVTs) in which they were asked to write what they and their teachers would be saying in an enquiry lesson and in a non-enquiry lesson.

Examples of the teacher journals completed by the teachers who are involved in the project have been analysed. These provided details about the enquiry lessons, plus affective comments.

Background

Bedlingtonshire Community High School is an innovative school and proud of its achievements and successes. It holds Technology College status, the Investors in People status as well as the Schools Curriculum Award. It is one of a partnership of schools in this area that, together, strive for excellence in all aspects of work with young people.

The school's beliefs are that:

- everyone is important

- learning gives us life chances

- we should strive to do the best we can

- we should all be honest with ourselves and others

- make the most of every opportunity available.

The school's aims (as shown on their website) are:

- to prepare students to be independent life-long learners and to be successful and positive members of society

- to promote creativity, confidence and determination

- to encourage students to have high expectations

- to develop self esteem and mutual respect

- to show that if we are positive we can achieve more.

The school's approach to the curriculum

The school aims to match 'learning to need'. It continually develops and offers learning opportunities to students that reflect their learning style, level of attainment and areas of interest. Not all students in the same year will work at the same pace; therefore a flexible 'personalised' programme is available to all students across year 9 to year 13.

This curriculum is built around a core of essential life skills that includes literacy, numeracy, ICT, teamwork and presentation skills, citizenship and ethical topics.

Following appropriate guidance, students will choose additional courses that lead to a variety of accreditations, to ensure that they all have the opportunity to achieve their 'personal best' (school website).

Curriculum innovation includes the KTP project, which focuses on the development of habits of mind, enquiry skills and enterprise education. The head teacher does not want to introduce too many new initiatives, but wants to focus on the enquiry approach which is seen as a long-term initiative.

The school's approach to securing participation and engagement

The head teacher was looking for a vehicle to change the culture in the school, but one that would not be seen as being dominated by the SLT. He felt that the 'real change' depends on a difference from the ground up.

Both the head teacher and deputy had experience of 'thinking skills' through the work undertaken in Newcastle. They volunteered for the project, because they felt it could help change the culture in the school.

The theory/rationale for thinking skills had been developed by Newcastle University, but it was felt that it was time to focus on the practice. The school was focusing on teaching and learning. Through the head teacher's own experience of the toolkit, he knew what effect it could have on students. He believes that if the teaching and learning are right, standards will rise – but he knows it will take many years.

The head teacher wants to create autonomous learners and raise the aspirations of all of the students at the school.

What does the school hope to achieve?

When the head teacher started at Bedlingtonshire, the school faced a lot of changes (there had initially been a middle school and high school in Bedlington but these were amalgamated when the middle school went into special measures). The culture in the school was not good. The students were very passive and the teachers were very dominant – teaching was, in general, old-fashioned. Teachers and staff did not like one another – relationships were very poor. There was a general perception that tight control was needed to keep the students from behaving badly. The head teacher hopes to change this culture and the relationships through innovation such as the 'in fullest time' KTP project.

How does it work?

KTP, an enquiry-based project, is now being implemented in the school which is part of a research project linked to the University of Newcastle. A KTP associate has been funded in order to manage the day-to-day running of the project, who works four days in the school and one day at the university.

The project started with a small group of teachers (core subjects), plus some teachers who were interested. The initial group was made up of pairs of subject teachers from a cross-section of practitioners (teachers, heads of department and senior leaders), but it is now moving to scale across the whole school.

The staff have introduced and trialled enquiry-based lessons with the year 7 students, often planned and taught in pairs. In these lessons the teachers 'stand back' more and allow the students greater independence and autonomy – they are encouraged to find out answers, rather than just be 'spoon fed'. They have also introduced a toolkit of activities, which can be used on a more frequent basis. Student researchers have also been appointed.

Initially, seven members of staff were asked to become involved in the project. Now there are over 14 (approximately one third of the staff). They include teachers in their first three years of teaching, heads of department, two ASTs, and two assistant head teachers. A variety of curriculum areas: science, English, mathematics, art, MFL, and geography are currently represented.

The project began in January 2008 and its primary aim is to improve learning for staff, students and the community. It also has a specific objective to devise, develop and implement an assessment framework for enquiry at key stage 3 using ICT.

When a teacher becomes involved in the project they meet with the KTP associate on a one-to-one basis. The associate then observes an enquiry lesson, which is frequently videoed. A debrief then follows which is non-judgemental and future steps are discussed.

Once the teachers are confident in how they approach enquiry teaching, they plan a lesson or series of lessons in pairs. This is often cross-curricular.

Staff involved in the project can attend weekly meetings, run by the KTP associate, which are intended to move the project forward and ensure that everyone is prepared and understands what they are doing – a 'team health check'.

The staff involved in the project, have discussed their work at various CPD meetings. Their teaching has also been observed by practitioners from other schools and other countries.

Students

Student researchers have been recruited. There is currently a core of 12, but there is a bank of 36 students who have been involved and who step forward when specifically interested or needed. The student researchers were informed of the process through a talk in assembly and fliers sent to form tutors. They complete an application form, which includes references. Applicants are then interviewed by their peers. The students attend weekly meetings (there are three on offer, one of which is a *philosophy for children* (P4C) session and the others are training sessions).

How does the school support the development of the approach?

Support from the SLT

This was seen as crucial for the project to work – to enable the teachers to feel confident to try things out, to take risks and know that even if things did not go well, it did not matter as long as they learnt from the experience.

> *'The senior management team are allowing you to try things and take risks as long and if something goes wrong you try and put it right.'* (teacher interview)

> *'Our head is very much behind the project and says give things a go – if they work –fantastic – if they don't, don't worry. I feel there is a culture in the school of giving new things a go.'* (teacher interview)

Support from the KTP associate

The role of the KTP associate has also been of vital importance in the development of the enquiry project within the school. The associate's enthusiasm and support for the teachers and students have been essential.

> *'[The KTP Associate] has been fantastic – she truly is a driving force – she pushes you on and this has been necessary. She has been very supportive.'* (teacher interview)

The toolkit

The development of a toolkit of activities, which can be used by teachers in their lessons in order to engage learners and develop their thinking skills, has been seen as an extremely positive development by both teachers and students.

> *'I use a lot of the toolkit all of the time. I use odd one out, 8 Qs all the time – it is good for exam questions, diamond ranking – all the time, target board – the pupils are much better behaved because these are short achievable tasks, inference squares – right up to sixth form.'* (teacher interview)

> *'In history the teacher got us to read some ways of describing World War II and got us to rank what was most important. Sometimes it's quite hard to think what's most important.'* (student description of a diamond ranking activity)

> *'I think they are more fun because it's better than having to sit down and be told this or copy a paragraph'.* (student description of a diamond ranking activity)

The activities within the toolkit were initially trialled by the teachers involved in the project and then the information was disseminated to all staff during CPD sessions. The toolkit activities are now regularly used by many members of staff.

How are the initiatives monitored?

The KTP associate meets weekly with the deputy head teacher to discuss how the project is progressing. She also meets regularly with Professor David Leat (Research Centre for Learning and Teaching) Newcastle University.

The school is collecting assessment data, attendance data and behaviour data in order to monitor any changes (see below).

Students' views regarding the enquiry project are discussed in regular meetings with the KTP associate and focus group interviews have also taken place as part of the evaluation of the project by Newcastle University.

What is the impact?

Although it cannot be attributed solely to the enquiry project, the head teacher does feel that it has had a big impact:

- there has been an improvement in attendance figures (school documentation)

- there have been fewer exclusions (school documentation)

- the students are better at articulating their thoughts and understanding (anecdotal)

- the data for years 7 and 8 shows that they are making greater progress than previous year 7 and 8 classes – they are matching year 9 levels (school documentation).

The head teacher and deputy observe lessons frequently and regularly.

Where next?

The head teacher and SLT want the enquiry project to become embedded. In order for this to happen, the school needs to make sure that when the associate leaves, the project carries on. The heads of department are believed to have the potential to support embedding enquiry-based learning across all lessons. This has been evidenced by the impact that one head of department has had who was involved in the project from the start.

Bridgemary Community Sports College

Five visits were made to Bridgemary Community Sports College between April and July 2009. The purpose of the two initial visits was to identify (through interviews with the school SLT and three lesson and cross-curricular event observations) the development initiatives, which related to student inclusion, engagement and participation. Next, our researcher spent a morning shadowing a year 7 student, which involved observing four lessons (top set modern foreign languages (MFL), middle set English and science and top set history). The aim of the subsequent two visits was to conduct interviews with the staff to explore their beliefs and discuss their approaches and to run a focus group with six year 7 students.

Overall, interviews were held with the principal and vice principal (quality assurance), the school CPD leader, Access[25] and transition coordinator, student voice coordinator, and four subject teachers in the following curriculum areas – English, science and MFL.

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[25] Access is an intervention programme at Bridgemary offered to Year 7 children to support transition from primary to secondary school. The programme aims to support vulnerable learners who struggle to access mainstream curriculum, through intensive teaching of literacy and numeracy in small classes. To ease their transition, students are taught in a 'primary-like' way: they work with one teacher supported by a teaching assistant. Learners' progress is intensively monitored and they typically catch up with their peers and gradually join the mainstream school Mathematics and English by Year 8 or 9.

During the length of the project our researcher was extensively supported by the vice principal and English AST, who facilitated and coordinated the enquiry in the school.

Background

Bridgemary is a specialist sports college in a deprived area of Gosport, Hampshire. The college has an above average number of students with learning difficulties, 'the majority of students enter the college with below average attainment and about half need significant help with reading' (Ofsted report, 2008). The inspectors highlighted the improvements which had happened in the school in recent years and noted the staff's commitment to 'introducing initiatives to extend student opportunities and horizons, and to personalise programmes of learning that motivated and engaged them in education relevant to their needs' (Ofsted report, 2008).

The school's approach to the curriculum

The school believes that the aim of the curriculum is to enable young people to become:

- successful learners – who enjoy learning, making progress and achieve

- confident individuals – who are able to live safe, healthy and fulfilled lives

- responsible citizens – who make a positive contribution to society.

The school SLT describes the process of development and curriculum innovation that has been happening at school in recent years as moving away from the 'default settings' characterised by limited challenge and flexibility of the curriculum, weak teaching, low expectations (partly determined by 'generational deprivation' of the local community), poor relationships with parents and community, etc. Some of the curriculum developments in Bridgemary include:

- 'shopping basket' curriculum at key stage 4

- vertical mentor groups which replaced traditional tutor groups

- vertical learning groups in core subjects across key stage 3

- expansion of vertical learning opportunities to non-core subjects.

Vertical ('stage not age') curriculum structures established in Bridgemary allow learners to move through the curriculum according to their progress. A learning path is designed and timetabled for each student. Young people can 'take national tests when they are ready to do so, rather than at the conventional time' (Ofsted report, 2008).

The school's approach to securing participation and engagement

Highlighting the rationale behind the curriculum innovations and linking them to student inclusion, the head teacher explained, 'We came up with a simple model. It has students at the centre'. Rather than punishing learners (for example for non-attendance) the school tries to build on the positives, offering them support and working around their needs and lifestyles. The 24/7 initiative offers an example of this approach. The scheme allows learners to come to school early, and either leave early as well or leave at the same time as everybody else but having done all their homework. The scheme is popular with 75 students for a number of reasons: 'get it over with' (43 respondents[26]), caring for others (24) no homework at home (24), extra courses (19), sports commitments (15), work (12), pets (4).

Another example of making school inclusive and offering all students an opportunity to achieve their potential is ACCESS education. ACCESS is an intervention programme for children entering Bridgemary with serious learning difficulties; it is characterised by small class sizes, intensive teaching of basic skills (literacy and numeracy) and building up students' confidence and self-esteem to help them transfer to mainstream school and be able to make progress there without much additional support. Learners typically stay in ACCESS education for between one and two years; each student's progress is closely monitored and their gradual transition into the main school is well supported.

Bridgemary teachers and members of the SLT emphasised that they viewed inclusion as a notion referring to all learners, meeting their needs and helping them to achieve their full potential. The school CPD leader noted:

> 'All children matter ... and they need to be included in the institution. A school has to try hard to change itself to support the learning of individual students. A school has to tailor its

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[26] Some students gave more than one answer.

> *organisation, goals, and ways of doing things to the particular individual needs of particular individual students.'*

The head teacher highlighted that she trusts her staff to use their knowledge of children and young people (for example using CAT and achievement data), to plan their development in each subject area and to be responsible for differentiating teaching and learning accordingly. Different approaches seemed to be adopted by departments and individual teachers. For example, within whole-school curriculum development initiatives ('stage not age', flexibility and choice of pathways and qualifications, cross-curricular schemes of work), which contribute to inclusion, we observed a number of ways in which different subject teachers at Bridgemary engaged students:

- effective use of teacher questioning skills to enable dialogic learning during whole class interactive teaching (English)

- enquiry based learning (science)

- using SEAL – emotionally engaging children to make learning relevant to them.

These were identified based on observations made by the researcher and do not claim to represent a complete picture of the school.

What does the school hope to achieve?

All the staff, particularly the principal and other members of SLT, were unanimous about the importance of raising aspirations and extending horizons among students, their families and the wider community.

Referring to the curriculum development initiatives within the school, the vice principal (quality assurance) highlighted the need to support and develop students as independent learners who 'identify themselves as positive learners', are equipped with relevant learning strategies and skills, and are aware of and able to build on their strengths and weaknesses. Cross-curricular projects (such as the Easter egg competition) and schemes of work, supporting the development of the independent learner and thinking skills within the curriculum, offer an example of how the school is currently approaching this issue.

The school feels it is important to provide the right learning environment (including physical) to young people. This includes working with parents and offering them advice and support in terms of creating the right environment at home.

How does it work?

As has already been stated, a range of approaches is being developed in Bridgemary at both individual teacher/department and whole-school level. Our attempt to describe them below is not representative but illustrative of the good practice (in terms of student engagement and participation), which we were able to observe within this project.

Cross-curricular events and schemes of work

Cross-curricular work in Bridgemary has an explicit focus on skills:

'We look at cross-curricular projects in terms of how we are supporting the independent learner, the development of thinking and other skills within the curriculum' (vice principal).

When visiting the school, we observed one of the cross-curricular projects in action – the Easter egg competition. It was a celebration of prior cross-curricular learning happening across:

- English (adverts, describing selling points)

- mathematics (volumes, sales figures)

- science (melting points of chocolate, the colour of packaging)

- ICT (website to sell their Easter eggs).

Other themes for cross-curricular events included 'Drugs and how they affect us' and 'Life on Mars', which was linked to a local community festival.

In terms of planning, colleagues from different departments meet to establish a set of learning objectives, which are then specified by each department. Departments then plan their work, aiming to maximise the impact of the project on students and staff, and consider and plan student assessment. Cross-curricular schemes of work take on average two weeks (eight lessons) to complete. A science teacher, who coordinated the cross-curricular schemes in Bridgemary, highlighted their main difference from the usual lessons:

> *'... they [students]can see the purpose of doing things [e.g. a science experiment] and would remember what they learn'.*

Science – enquiry based learning

Our researcher observed high levels of student participation in a year 7 science lesson. It began with a starter, 'What sports activities do you need a good grip for?', intended to make the topic 'friction' relevant to the young people. Students then worked in groups. First they planned their enquiry investigating friction by mapping their ideas (on sticky notes) onto the writing frame. The framework included the following questions/statements:

- I'm trying to find out...

- I need the following equipment...

- My equipment will be set up like this...

- I'm going to change (independent variable)...

- I'm going to keep the same (controlled variable)...

- I will measure its effect on (dependent variable)...

- What could go wrong?

- How I will record my data? (design your table here)...

- What is the best way to display your data to see a pattern?

The students worked with this or a similar framework every time they did enquiries so it was familiar to them. They didn't have any questions about how to use it and what it was for; they immediately started planning their enquiry and then made notes recording the data as they progressed.

The resources for the enquiry were provided at the central resource station; some of the resources were relevant for experimenting with friction and others were not.

English – whole class interactive teaching

Student engagement in a lesson, the content of which was a 17th century poem, was very good: about 60 per cent of students were forthcoming, volunteering to participate in the fast-paced whole-class discussion; the rest were involved through teacher questioning aimed at developing understanding and securing the participation of all learners. When interviewed, the teacher briefly described her strategy in terms of questioning as not to ask closed questions; make sure everybody participates; have core content that needs to be covered (in her case – English – the core questions were around the structure of a piece, its form and content, the devices used, the purpose and whether it was achieved); and '*questions should be challenging (as in Vygotsky's proximal learning) and ... keep asking until both you and the students find it interesting'.*

The analysis of the transcript of a short part of this teacher's lesson revealed that she mainly used open, probing, uptake, and occasionally speculative and process questions, such as:

- What's her motivation for doing that? (open)

- 'Enticing' is a really unusual choice of word. Why did you use it? (probing)

- What attracted you to choosing this poem? (process)

- Why would you want to behave in such a way? Why would she want to? (speculative)

The teachers emphasised that asking the right questions was not enough and that student engagement was often the result of good teacher–student relationships and teachers' high expectations of their students.

Respect

Respect was an important feature of the relationships between teachers and students in the examples described above. This was both identified by teachers themselves and observed by our researcher and manifested in a variety of ways.

In English, we observed students being confident and trusting their teacher when they brought their thoughts, often very personal, to the whole class discussion. The science teacher we interviewed indicated her respect of students' backgrounds: she was aware that particular topics might be difficult for some students, for example Darwin for very religious students or cancer or genetic diseases if this was an issue for a student's family. She said that she usually

approached such students before the lesson and discussed with them individually the way in which they would prefer to participate in it.

In another lesson, the history teacher expressed (to an all white year 7 class) her feelings and emotions as a black woman when discussing the Middle Passage and slavery. It achieved the desired effect (empathy from the children and their engagement and participation in the lesson) only because the children have great respect and a good relationship with the teacher.

How does the school support the development of the approach?

The school CPD leader provided an overview of some of the professional learning opportunities existing within the school: weekly twilight sessions; induction (for new colleagues), including around inclusion; training courses; cross-department and within-department observations; performance management cycles; and subject improvement plans. Subject teachers were very positive about their experiences of coaching and peer observations aimed at exploring in deep and developing particular aspects of teaching and learning, for example questioning skills, assessment for learning (AfL) and group work. The school is currently working hard on linking various CPD opportunities to maximise the benefits for teachers' professional learning and student outcomes.

Both the school CPD leader and the vice principal (quality assurance) emphasised that they valued the expertise of their staff and tried to develop an 'in-house' model of professional learning:

> *'The most effective CPD, from our experience, is to invest in training and development (and time to do it) of a core team who then become champions in developing a particular area/project. We find it to have a much better effect than having a whole school CPD when the staff are talked at, using a PowerPoint'.*

How are the initiatives monitored?

The school has a number of monitoring and quality assurance systems in place; achievement data and CAT were cited frequently as a source of information about students as well as monitoring their progress by all the members of staff we interviewed.

Student voice is very developed in the school. Its structure is complex, 'mirroring' the structure of the school SLT (members of the SLT work with respective junior bodies, for example the deputy responsible for quality assurance works with the junior quality assurance team):

- junior leadership team

- junior quality assurance

- junior subject leaders

- junior subject teams

- peer mentors

- school council

- sports captains.

A team of deputy subject leaders – students who collect their peers' perceptions about teaching and learning in each of the curriculum areas – observe lessons and generally work with heads of departments and the SLT. During lesson observations the representatives of student voice look at how active and engaged the students are, the relationships between them, and how positive and supportive the learning environment is. If students have any issues in a particular lesson or subject, they discuss it with the deputy curriculum leaders.

Individual teachers were also eager to hear their students' voice:

'Our students are very forthcoming and good at vocalising their opinion. So they would come and tell me whether they thought a lesson was interesting, challenging, useful or not. Then there are indicators such as attendance: we don't have many problems with attendance in English but if we do, it often is with children who don't engage. Another indicator is when they volunteer to do some more work, e.g. come after the lesson and say "I'd like to research that" or "I'd like to learn more about this".' (English AST)

What is the impact?

Although it cannot be attributed solely to the curriculum development initiatives within the school, the principal believes that they were crucial in improving achievement and attendance in recent years.

Students' perceptions about the initiatives and projects such as 'stage not age', 24/7 and cross-curricular schemes are collected by the school and are generally favourable. Year 7 students

who took part in a focus group interview emphasised that they enjoyed their learning experiences in Bridgemary and found them stimulating and challenging. The feedback about cross-curricular projects was particularly positive: learners liked 'doing things' and thought the learning was relevant to them. The young people at the focus group also identified an area they thought might be further developed to increase their engagement in learning: they suggested increasing the amount of group work in various lessons and activities.

Norbury Manor Business and Enterprise College for Girls

Two visits were made to the school in June 2009. During these visits, interviews were held with one of the deputy head teachers, two assistant head teachers (with responsibility for inclusion and thinking skills, respectively), the head of drama (who also has responsibility for SEAL) and the lead mentor. One year 7 drama class was recorded on video and a commentary was added by the teacher, the head of drama who taught the class. She was also subsequently interviewed by telephone. In addition, a focus group interview was held with seven students in years 8, 9 and 10 all of whom have undertaken observations of trainee and newly qualified teachers.

Background

Norbury Manor Business and Enterprise College for Girls is located in Thornton Heath on the border between South London and North Croydon. It has over 1,000 students, a high proportion of whom are from minority ethnic backgrounds and it was categorised as an outstanding school in its last Ofsted report in 2007. The inclusion challenge facing the school is exemplified by the fact that in September 2009 students will join the school from 58 feeder primary schools.

The school's approach to the curriculum

The school is developing a range of policies and initiatives which are intended to meet its objective of 'removing the barriers to learning' and broadening its approach to the curriculum, such as thinking skills, SEAL, creativity and deep learning.

The school's emphasis on deep learning was described by the deputy head as a way of bringing together and rationalising some of these curriculum initiatives underway in the school. Deep learning, which takes the form of 12 deep learning days during the school year on which the curriculum is suspended was identified as a way of developing higher thinking skills over more sustained periods of time and fostering independent learning. This allowed the school to 'focus on skills and taking [students] out of subjects', often through taking them out of school on enterprise projects and concentrating on encouraging creativity and challenging students of all

abilities. Activities include visits to a farm, city firms, museums and 'take your daughter to work day'. At the same time, it was intended that building partnerships in this way would deepen relationships in school and externally with a range of interested parties.

Other initiatives such as thinking skills have been developed over the last few years and integrated into curriculum planning throughout the school. Work has begun on linking the PLTS learning outcomes with SEAL and ECM outcomes to bring the various initiatives together and prevent duplication of effort.

The school's approach to securing participation and engagement

The school has worked on SEAL, emotional literacy and wellbeing with Antidote and this forms the basis of its approach to inclusion. Staff interviewed emphasised the value of 'knowing children well', of fostering independent learning and creating a 'tolerant community'. Staff and students approved of the 'massive support' and 'extensive safety net' available to students, exemplified by the mentor system designed to support vulnerable students and reintegrate them into the school. The lead mentor emphasised the importance of building their social and communicative skills to enable them to participate fully in school and reduce their dependence on mentors. Mentors also have a mediating role, negotiating with teachers for students and ensuring they have a private space in which to engage with learning.

The student observer scheme is another way in which inclusion is extended in school. Students are selected to be trained as observers of trainee and newly qualified teachers and given advice about how to give feedback. Some of the benefits that participating students had gained from their involvement in the scheme are discussed in the impact section below. In addition, the school has a student voice mechanism, which is run by the head girl team and open to all students who want to participate. It was felt that the electoral models common in many schools were divisive.

What does the school hope to achieve?

As already been stated, the deep learning programme is designed to bring a range of initiatives together, extending the participation of students, stretching the curriculum and providing opportunities for them to learn out of school and to bring external experts into school. Through focusing on areas such as thinking skills, the school has been able to highlight the importance of developing transferable, cross-curricular skills and extend the range of options available to students, supported by the mentor system.

Extending the curriculum through the deep learning programme was also felt to benefit staff and the school as a whole in that it allowed them to engage students in an area over a sustained period of time. In terms of maximising participation and inclusion in learning, benefits were thought to be associated with making the curriculum more flexible and enabling students to engage in business or enterprise activities using external expertise.

How does it work?

Changes to inclusion and participation are difficult to track outside of school policy documents and aspirations. To overcome this, a year 7 drama lesson, which was designed to address social issues and wellbeing, as well as allowing all students to participate, was recorded on video. A commentary was added by the teacher, the head of drama, and interviews were subsequently held to explore the implications of her pedagogical approach.

The drama lesson took place towards the end of year 7 by which point the students had developed some drama skills and were familiar with some of the techniques used in the lesson. The lesson focused on content, rather than skills development, using dramatised arguments to explore problem solving and a range of SEAL goals, including empathy, empowerment and restorative approaches. The purpose of the lesson was to enact a series of arguments and discuss them as a class. The teacher emphasised that exploring social issues in this way helped to reiterate to students that drama was useful for everyone and has a range of benefits, such as being able to interpret body language and acknowledge other people's views on a situation: 'I'm hopefully making them think that they're not passive'.

The lesson began with a quick game in which students, standing in a circle, had to perform something for a few seconds in turn. Starting with a game, a technique which the teacher uses habitually, was intended as an icebreaker: 'It relaxes people, it makes people smile. It gets people working as a group and it's meant to be a positive experience […] And it teaches them skills as well. The thing is to chill down, relax and get focused'. In the lesson, the drama studio was used flexibly with students mainly working on the floor and in a circle, although the teacher said that she remained aware throughout that there was nowhere for students to hide and that some students were anxious feeling exposed as a result of working in this way.

The teacher then introduced the objective for the lesson and put the students into random groups of two or three. They were asked then to mime an argument to each other. This was intended to break up friendship groups and start them thinking about arguments. Using mime

allowed the process to remain fairly light-hearted. After this, students were allowed to select a partner to work with, as the teacher felt that trusting your partner and feeling safe was important if the students were to tackle such potentially sensitive areas as arguments. Students were asked to draw on their own experience in choosing an argument to work on, although the teacher was careful to suggest that they should not focus on a recent or unresolved issue. Working in pairs was something that she had worked on with the class, after preparing them with lots of games designed to promote sharing and develop trust in the group. After the pairs had acted out their arguments for each other, the teacher selected five pairs to act them out to the class as a whole. After each argument, the class was asked to comment on how to resolve it and the teacher emphasised that this audience role, listening to and observing the action and empathising with the protagonists, was at least as important to the lesson as acting.

In this way, the lesson allowed all students to participate and encouraged them to meet SEAL objectives that were written into the lesson plan such as seeing events from others' points of view, managing their feelings and being able to intervene in social situations. The teacher knew that the class was familiar with SEAL from primary school but lessons such as this were opportunities to test whether they could apply SEAL attributes in practice. Students were given control over the content of the lesson; 'You've got to get a balance in drama between telling them what to do (and feel safe) and giving them freedom to do what works for them'. The teacher was also careful to appeal to their expertise to allow her to tune in to the cultural aspects of some arguments, for example in asking them how serious a dispute about stealing a mobile phone would feel to them. The follow-up lesson took the problem one stage further, looking at potential reactions at home, allowing students to take on the perspective of the adult. The lesson observed was not formally evaluated but would be discussed and evaluated when the series of lessons was complete. The teacher felt, however, that the students had gained in confidence through performing during the year and it was clear that as well as developing drama skills, they had grown used to working as an inclusive group on sensitive issues.

How does the school support the development of the approach?

Staff stated that Norbury Manor offers an extensive CPD programme, including areas such as inclusion, thinking skills and SEAL. The trios of staff which had worked together to plan and deliver training on thinking skills was felt to have been particularly successful and a DVD was produced to reinforce the learning. Schemes of work had been changed to incorporate thinking skills outcomes and work is going on to map and integrate them against SEAL objectives.

The SLT has taken responsibility for the initiatives implemented and has ensured that time and opportunities are available for staff to plan deep learning days, for example. In addition, the extended use of mentors to support vulnerable children was seen to play a crucial part in supporting inclusion.

How are the initiatives monitored?

The school has extensive monitoring systems and achievement data is cross-referenced against indicators of students' wellbeing and they have worked with Antidote on SEAL surveys in the past. For example, it was clear in the lesson observed that SEAL objectives had been integrated into the lesson and informally monitored by the teacher. Student voice structures are quite developed in the school, allowing as many students to participate as want to, and students have had input into policies in areas such as transport and healthy schools.

What is the impact?

In terms of impact on learners, the interview with student observers indicated the most obvious gains. Students felt that being involved in the school in this way had made them more confident in general and developed qualities in them such as respect, tact, impartiality, reliability and trust. It has enabled them to take a more critical stance towards learning and teaching but also given them a new, deeper perspective on the teaching process and how to feed back to others sensitively.

It is harder to gauge the impact of deep learning days or the developments around SEAL but it is clear that the school is committed to continuing them.

Where next?

Norbury plans to extend and develop some of the initiatives it has begun, notably the deep learning days, and integrate further and rationalise work they have done in areas such as SEAL and encouraging creativity. They are also looking at extending the existing student voice structures, particularly into involving students in developing school policy.

St Thomas More RC High School

Members of the research team held two meetings with the head teacher. These meetings provided information about the ethos of the school, the curriculum, the teaching and learning

structures in place and the role of student voice. In addition, a member of the research team spent a morning shadowing a year 7 student. This involved attending registration with the student and observing three lessons. The morning provided valuable insight into the atmosphere in the school, the relationships between the staff and students, the structures in place to monitor behaviour and also how teachers engage students in lessons. Finally, 11 teachers representing three curriculum areas (ICT, geography and mathematics) videoed sections of their lessons and these were then discussed individually with the research team. This enabled the team to discover how the teachers include and engage their students through both lesson planning and delivery, how they personalise the curriculum (including the role of student voice), the changes that the teachers have undergone since they embarked on a career in teaching and how the school supports them in their career development.

Background

St Thomas More is an 11–18 mixed comprehensive serving the Catholic population of North Tyneside. It is a mathematics and ICT specialist school. The school has seven primary schools within its pyramid. The catchment area provides the school with a well-balanced, genuinely comprehensive intake and there are approximately 1,700 students on the roll, including 340 post-16 students (information from school web site.)

Practice is quite traditional, particularly at key stage 4, and students have to study the core subjects plus religious education (RE) and ICT. There are some vocational elements – sport, health and social care, but only 10–12 students study these (head teacher interview).

The school's approach to the curriculum

The curriculum has been designed to be as inclusive as possible in order to maximise achievement. The head teacher feels the success of this is demonstrated by the results that they achieve on the key stage 2–4 progress measures, whereby all the groups of students (boys, girls, students with special educational needs, second language learners) show levels of attainment significantly above the national average. (Ofsted, 2007)

The head teacher believes that the key to the success of the school is personalising the curriculum. The school does not 'target' particular groups but looks at the needs of each child and where their interests and abilities lie. In year 9 the school then tries to accommodate student curriculum choices based on their needs. They offer flexible 'pools' of choices to enable the students to study those subjects that they are 'good at' and which 'particularly interest' them

(year 9 curriculum choice booklet*).* The school believes that if students are studying subjects that interest them, they are more likely to achieve.

The class sizes are very small, particularly in the lower attaining classes, which often consist of 16 students. Pupils' progress is monitored closely, and the curriculum is modified or is changed to include more vocational elements, if appropriate.

The school's approach to securing participation and engagement

St Thomas More is a Catholic school and aims to:

- be a community based on Christian values, notably love, justice, peace, truth and tolerance, and to encourage individuals in their commitment to these ideals

- provide a secure, welcoming and ordered environment in which individuals learn to value and respect both themselves and others

- give individuals the opportunities to develop their full potential as human beings, and to encourage and challenge them to do so

- encourage everyone to strive to do their best and to strive for the highest standards in all areas of activity

- help children to grow into confident, open, resourceful young people with a sense of responsibility and service.

(Information from the school web site.)

Every child is considered to be precious and the challenge is for the school to do their best for all of them.

Evidence obtained by the research team shows that continual development and appraisal of teaching methods and strategies employed by the teaching staff in order to engage all students is a high priority within the school. Students in the school are not 'streamed', but are put into sets in each subject according to their prior attainment. The underlying rationale is the belief that it is ideologically demotivating to stream a student, for example to put them in a top/bottom set for every subject just because they are in the top/bottom set for mathematics. Rather a student

is 'set' on the basis of their performance in each subject area. The pattern for setting is (information from the school web site):

Year 7: Mixed-ability form classes in all subjects except mathematics where setting is introduced from October. (Some students with special educational needs are withdrawn in mathematics, English and science.)

Year 8: Setting in mathematics, English, languages, history, geography and science with mixed ability continuing in RE, art, music, technology and PE.

Year 9: As in year 8, with setting extended to RE and music.

Years 10 & 11: Setting by subject in all areas, except art, PE and PSE.

What does the school hope to achieve?

For students: The school provides a safe environment that encourages all students to enjoy their school experience and fulfil their potential. This is achieved through offering a highly personalised curriculum, which involves teachers in developing a variety of teaching methods and activities in order to engage the students. Good relationships between staff and students are also a key focus for the school.

For staff: The school culture encourages all staff to continually develop their teaching skills and knowledge in a non-judgemental environment. Good practice is highlighted and high quality lesson delivery encouraged. CPD is well organised and structured, encouraging teachers to continually question what they are doing and why.

How does it work?

The teaching staff at St Thomas More are encouraged to adopt a wide range of teaching styles and strategies in order to successfully engage the students and to achieve exam success. The following example of inquiry/problem-solving activities offers a glimpse of what the teaching staff provide at the school. It is based on observation by the researcher and the videos made by the practitioners themselves.

Teachers across all the subject areas include open ended/problem-solving activities in their schemes of work where the students work together in groups in order to complete a task. The tasks encourage the students to use the knowledge and skills that they have developed in

previous lessons and apply them to practical 'real-life' situations. These activities frequently take place over a series of lessons.

The researcher observed an example of a mathematics inquiry where year 8 students worked together in groups on a 'wrestling problem'. This involved the students being provided with data that would help them calculate the selling price of the tickets to the wrestling competition in order to make enough money to run the competition. The mathematics involved included fractions, algebra and percentages, but students were not told what mathematical knowledge they needed to use or when to use it, which is quite different from more traditional mathematics teaching. They also needed to work together as a team in order to complete the task.

Both the teacher and the students found the task very stimulating. The teacher found that undertaking a longer problem encouraged conversation about the mathematics that was not usually present in more traditional lessons. It also enabled the students to apply the skills they have developed to an actual problem.

The students commented during an evaluation:

'I did enjoy the task as it was a new style of learning and more independent than other tasks that we do.'

'I did, [enjoy the task] because I like group work. Six minds are better than one.'

'Trying to solve the problems I used a wide range of mathematical skills ranging from adding and multiplying to solving algebra and fractions.'

How does the school support the development of the approach?

Once a week the school finishes early (as do the other schools in the cluster) to enable CPD to take place. This involves either the whole school together or each department getting together to focus on teaching and learning. Once every half term the three cluster schools meet for collaborative CPD – these sessions are held alternately at the schools within the cluster and cover a different theme on each occasion.

An example of cluster group CPD was a series of workshops based on Kagan's cooperative learning structures (which one of the other schools in the cluster had introduced as a whole-school initiative). Teachers from St Thomas More attended the workshops which all focused on a different Kagan technique, with the senior management team ensuring that groups of staff

attended all of the workshops. After this event the staff at St Thomas More fed back the information regarding how the initiatives work. The school is now at the stage where teachers can use these techniques if they choose to and some have introduced them into schemes of work. The teachers have been given booklets that describe the techniques and these are also given to students on placements.

Teachers are encouraged to use innovative teaching and learning strategies and the school has a teaching and learning group which is part of the senior management team and which meets on a weekly or fortnightly basis to talk about new initiatives and get them into classrooms. For example when the school introduced thinking skills activities, a working party ensured that these were introduced in different subjects so that students would become familiar with them in a variety of contexts.

The teaching and learning group intends to focus in the near future upon the newly qualified teachers that are appointed to the school in order to encourage them to introduce new initiatives they will have experienced at university to older members of staff.

Peer observation is encouraged, and teachers regularly observe one another in order to see how new teaching strategies work and also to see how the teachers manage their classes. These sessions are always positive and supportive.

The Teachers International Professional Development Programme (TIPD) is designed for classroom teachers. Each local authority develops programmes that enable teachers to examine teaching methods in different countries. Staff at St Thomas More have been to Canada and Singapore and some visited China in the summer of 2009. Teachers who have been abroad feed back to the rest of the staff about their experiences, and links with international schools are established.

The local authority also works with the school, and has helped it pilot initiatives to introduce assessment for learning school. Again this experience is fed back to staff through whole-school CPD. One such initiative was 'two stars and a wish' and some teachers, for example, in the ICT department, have introduced this into the students' peer assessment activities.

The SLT undertakes departmental reviews that involve: lesson observation, examination of schemes of work and lesson planning, and meetings with the students. The information obtained by the SLT during these meetings is then put into a document which is discussed with

the head of department and an action plan drawn up. The teaching staff see the reviews as an opportunity to show what they do. If the SLT sees examples of good practice, the staff involved are asked to disseminate this to the rest of the school during CPD sessions.

The assistant heads observe lessons and provide supportive feedback to the teachers. This includes highlighting areas of good practice, as well as areas that need developing – this is non-judgemental. The observations form the basis of targets that are also fed back to the head teacher. These are used to plan the CPD programme.

How are the initiatives monitored?

The initiatives that are introduced by teaching staff are continually monitored within departments and evaluated to see how successful they have been, both in terms of levels of student engagement and in the resulting assessments.

The model is very much 'bottom up' – the SLT does not dictate what approaches departments should use, but if the data show underachievement after two years, the staff are expected to examine the possible reasons for this. The SLT will give extra support if necessary, and possibly look at alternatives with departmental staff.

Examination results are important to the school and the SLT would not wish to see standards fall as a result of initiatives that do not appear to work. However, a culture exists that sees the continual development of the curriculum and teaching as vital to its success.

Student voice is a key element of all the departmental reviews and the teaching staff are expected to respond to views put forward by students. During the reviews, the students are asked about homework, how often they are given feedback and whether they feel the feedback enables them to improve their work. They are also asked whether they know their national curriculum level and whether they know what they need to do in order to achieve the next level. This information is then fed back to the head of department at the end of the departmental review.

The student council is elected and all students vote for their chosen candidate – there is one for all year groups. At school council meetings the staff take issues to the students that they wish to be discussed. Students may also set the agenda.

Students sit on the interview panels for new staff members and form part of the final decision making. A range of students is always represented on the interview panels.

What is the impact?

St Thomas More is a high-achieving school academically, and key stage 2–4 progress measures demonstrate that the school shows levels of attainment significantly above the national average for all groups of students.

Where next?

The school has a culture in which innovation and personalisation are supported and there is a strong professional development programme. From this strong basis the school might consider whether it wants to develop curriculum elements which combine subjects or at least blur their boundaries, allowing consideration of significant personal, local, national and global issues which do not conform exactly to those subject boundaries. Such developments are occurring in a range of schools nationally and hold the prospect of allowing the curriculum to respond to students' knowledge and interests.