

A Case Study from Belfast Boys' Model School

Planning and Implementing the revised Northern Ireland Curriculum

Key Stage 3 Science

Aim of this Case Study

A reflection on the first year of implementing the revised Northern Ireland Curriculum in Science – the successes and challenges, with a particular focus on Assessment for Learning.

Planning

As part of our Science department's planning for the revised curriculum, a chosen focus was the implementation of Assessment for Learning strategies.

Other preparations/decisions included:

- Identifying and purchasing a suite of resources that would help us shift our lessons from a teacher centred approach to a learner centred approach – supporting teachers as facilitators of learning.
- Putting a greater focus on the development of skills.
- An induction week for pupils, 'What is Science?'
This covered some aspects of what it means to be a scientist, the skills a scientist should have and the importance of these, through fun and engaging activities.
Topics in this induction unit included:
 - The importance of good communication
 - The jobs in science
 - How do scientists use evidence?
 - What makes an experiment fair?
 - How does a scientist's work get to our eyes and ears? – the role of the media
 - How to read a newspaper
 - Don't trust everything you read
 - What is bias and how is it used?
 - My 'Brainiac' Idea (from the television programme).

Assessment for Learning Strategies

Getting the classrooms ready

In each laboratory a 'We Are Learning to' (WALT) board was displayed clearly at the front of the room. This board is used to display which aspect of the Thinking Skills and Personal Capabilities framework that the pupils will be developing as they explore a particular science topic.

Alongside the WALT board, another board 'Success Criteria' or 'What I'm Looking For' is also shown. If there is a main task in a lesson, this board is used to display several elements of the task (sharing assessment criteria) that must be completed by the pupils in order to be successful. Any subsequent assessment related to the task must be scored against these elements.

What worked well?

The use of the WALT board has allowed pupils to see some connections between different areas of learning and recognise the skills they are using. However, considering the neutral/negative informal feedback provided by pupils in class on the sharing of learning objectives, it will most likely take more than one year for the immediate benefit of this strategy to be realised.

In our experience, the most effective AfL strategy implemented this year has been the use of success criteria. Pupils use the success criteria as a guide to what they should do to complete an activity successfully. Four or five statements written on the 'success criteria' board can be checked off by the pupils as they work through an activity independently or in groups. As the year progressed we began to negotiate the success criteria with more able classes to encourage pupils to take ownership of their learning.

Assessment of the piece of work produced was marked against the success criteria. The '2 stars and a wish' method helped in providing constructive feedback. When any homework that was assessed using '2 stars and a wish' was returned to the pupils, they had an opportunity to act on the suggestion in the 'wish' which provided advice on how to improve. Verbal feedback was then provided by the teacher to confirm the improvement had been made. We noticed this system was particularly useful in encouraging the production of high quality PowerPoint presentations, creative writing, graph work and homework.

The progress made by many pupils of all abilities has been remarkable. In an average ability class you always get great pieces of work and some that need much improvement. We found that almost all pupils in the class can reach a common ground and be successful. Pupils' confidence also receives a boost as the all too familiar group at the bottom of the class slowly realise that they can do what has been asked of them. The ideas are already present in their head however, the success criteria scaffolds their thinking and teases out their thoughts onto paper or screen. Work produced is no longer rushed but planned, no longer muddled but in a logical order. Many pupils also appeared to be more focussed when using this system and pupils with challenging behaviour seem more settled as they understand exactly what they have to do.

Successes and Challenges

At the end of our first year delivering the revised Northern Ireland curriculum in Science we have identified several successes. We believe that the pupils are enjoying their Science lessons and that learning is taking place. The use of success criteria has allowed vast improvement in the quality of pupil work and general progress.

Challenges do exist and at the beginning it seemed like we were undertaking a mammoth task. In retrospect, the hard work is paying off and it is getting easier to develop suitable resources as we become more comfortable with a different way of doing things.

We are no longer focused on completing all the material and have the flexibility to explore topics relevant to today's news. An emphasis on grades has taken a backseat to seeing progress in pupils' learning, and we have seen some real progress across all abilities. Our classrooms have changed too, not just in layout but in the activities that take place. Group and pair work as well as peer reflection is commonplace and pupils will often be out of their seats in an environment that is much noisier than it used to be.

Top Challenges of the Year

- **Differentiation for Special Educational Needs (SEN) pupils**

Delivering the revised Northern Ireland curriculum to SEN pupils has been the greatest challenge. Asking pupils who lack the basic literacy and numeracy skills to make decisions, think, analyse information and be creative is a very difficult thing to do. Even very basic lessons were too difficult for our pupils with severe learning difficulties. We don't want this new way of doing things to be completely inaccessible to struggling learners and the hope is that we will develop/find material that is suitable to their learning needs.

- **Changing our mindsets**

From delivering a content driven curriculum towards a skills based approach, implementing the revised curriculum is a process that will take time. We realised early on that you *can* do too much at once, with quantity substituting for quality.

- **Time to Plan-Do-Review**

The development and implementation of the revised Northern Ireland curriculum has been a time consuming process, however, we found that it got easier as the year progressed. We developed the year's work one term at a time and plan do to the same for Year 9. The first term of work was produced during August baker days and the second produced around Christmas, with time for reflection on what worked well and what needed improvement. As we developed resources for Year 9 we felt it was important that the Year 8 material was not left unaltered. A member of our department spent a considerable amount of time in June 2007 reviewing and improving the Year 8 course. Their alterations included the writing of WALT (We Are Learning To...) statements into the teacher's manual, to ensure a consistent approach, as well as some success criteria into the pupils' workbooks. We also discovered very quickly in the first term that we had included far too much content in the workbooks and we have significantly reduced it for this coming year.

Designing Homework

During the planning phase we found it challenging to create homework that could be assessed formatively. In our experience, the following pieces of work create good written assessment opportunities.

- Pieces of creative writing – pupils could be writing their opinions, creating a fictional story, writing a letter, role-play or newspaper article.
- Comic strips – drawings to represent various Science concepts or a newspaper story they read in class.
- Comprehension – most comprehension given as homework was based on a newspaper article (BBC Newsround website is useful for this) related to a topic they had just explored. For example, we used articles on acid spillage accidents when studying acids and alkalis.
- Graphs – commenting on the use of labels, titles, plot area, scale etc.

School Context

Belfast Boys' Model School is a controlled secondary school for boys aged 11-18. It is situated on the Ballysillan Road in North Belfast with an enrolment of 950 and 72 members of staff. The pupils at the school come from a variety of areas some of which have suffered significant civil unrest over several decades. These areas are also adversely affected by continuing social, economic and demographic change. Many pupils come from disadvantaged backgrounds and some 39% are entitled to free school meals.

The Boys' Model is one of fifteen schools involved in the CCEA Revised Curriculum Pilot in Northern Ireland and one of three in Belfast. Work started on the pilot in mid-2006 as the staff endeavoured to find an effective way to approach the challenge of being a pilot school. We had to implement the revised Northern Ireland curriculum a year early, following guidance and training provided by CCEA and BELB, with other schools following on in September 2007.

A Curriculum Team was set-up in school composed of 10 members of staff, chosen to play an interdepartmental role, who might effectively and enthusiastically implement the revised Northern Ireland curriculum. The Curriculum Team member in our department was responsible for introducing some principles of the revised Northern Ireland curriculum to the department including the 'Big Picture', General Areas of Learning, Statutory Requirements and the Thinking Skills and Personal Capabilities framework.

Year 8 & 9 pupils have six 30 minute periods of general Science each week and two periods of each specialism in Year 10. Up to this point, Biology, Chemistry and Physics topics were mixed and spread throughout the year with equal weighting.