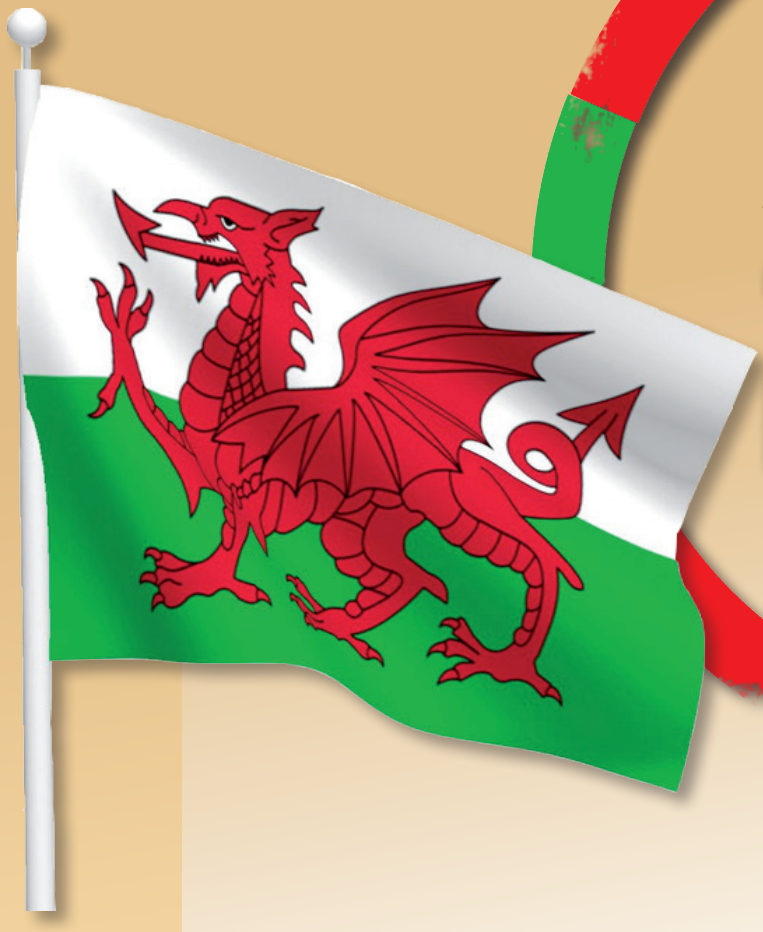
leading change



Curriculum change and raising standards:

THE WELSH PERSPECTIVE

Key Words:
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highlights some of the key ways forward identified by inspections in Wales

The 2008 science curriculum for Wales marked a landmark change in the way teachers planned and delivered science in primary schools (DCELLS, 2008a). It was at the vanguard of the more pupil-centred style of curriculum planning and pedagogy that supported the dual initiatives of improving the quality of assessment for learning and thinking skills in all schools.

The key changes in the 2008 curriculum included:

- the removal of science as a statutory subject in the foundation phase (up to 7 years of age);
- a significant reduction in the quantity of content knowledge (range) prescribed in the new key stage 2–3 (ages 7–14) orders;
- an increase in the focus on teaching and assessing science enquiry skills in all key stages;
- a consolidation of science assessment into three new sections in key stages 2–3: plan, develop and reflect;
- a removal of the requirement to report progress in science in the foundation phase.

What were the challenges?

The challenge for schools and local authorities was to align both curriculum planning and pedagogy to reflect both the requirements and the ethos of the new curriculum. This included a renewed focus on improving the effectiveness of formative assessment and thinking skills in schools (a programme that had commenced several years earlier). There was also an indication

from the Welsh Government that schools were now free to organise and deliver the curriculum in a manner appropriate to their learners (DCELLS, 2008b). A number of local authorities invested resources into creating thematic-based schemes of work that integrated science into topics. There was wide variation in the response of schools to the dual challenge of curriculum and pedagogical change, including:

- **retaining existing curriculum planning in science and simply refining the range and skill content accordingly;**
- **creating new science schemes of work based on the 2008 orders;**
- **creating new thematic-based schemes of work integrating principles of thinking skills and assessment for learning.**

Although running concurrently with the curriculum changes post 2008 (and promoted as an integral part of the Government agenda to improve standards), many schools approached the 'curriculum' and 'pedagogical' changes as mutually exclusive tasks. In many cases, the result was a lack of a clear focus – at both school and system-wide level – as to what was the most important factor affecting standards in science in Wales: curriculum or quality of teaching and assessment? In some schools the reduction in range of content alongside a new focus on 'learner-centred' teaching led to an unfortunate reduction in both the quantity and quality of pupils' scientific work.

Science was now commonly encountered integrated into thematic planning. In the hands of skilful teachers, thematic integration enhanced the quality of scientific experiences and learning. However, poorer quality thematic planning, frequently characterised by weak subject linkage and poorly developed enquiry skill development, often resulted in insufficient opportunities to ensure progression in both science enquiry skills and content range. Reservations about the quality of pupils' skill development in the post-2008 curriculum were reinforced through a critical report from Estyn, the schools' inspectorate in Wales (Estyn, 2011), citing fault lines between subject delivery and generic skill development.

More recent reports

In June 2013 Estyn published a thematic review into the standard of science in Welsh schools in key stages 2 and 3 (Estyn, 2013). Although the report found that the majority of teaching and learning observed was good or better, it identified some key concerns, namely:

- **the lack of challenge for more able pupils and a decline in the proportion of pupils achieving the higher level attainment (level 5 and above);**
- **shortcomings in the assessment of science in nearly all primary schools, including doubts over the reliability and validity of teacher assessment judgements, compounded by a lack of external verification and unclear assessment criteria;**
- **curriculum planning lacking structure and challenge in a minority of schools, including insufficient opportunities for pupils to use and apply their scientific knowledge;**
- **insufficient teaching time in primary schools that allocate one hour per week to science;**
- **only half of primary schools having a clear vision for the subject in their school;**
- **insufficient support for science from local authorities and/or regional consortia.**

It is now a significant challenge for schools in Wales to respond to the recommendations of this report. Recent reforms to the education system have removed nearly all subject-based support and now place a heavy reliance on school-to-school support networks. Since 2011, Welsh education policy has been fixed upon a rapid response to the PISA agenda, including improving standards in literacy and numeracy together with corresponding statutory testing of these. Proposals for a new skills-based curriculum in 2015 are focused around literacy, numeracy and wider skills.

Quite how Welsh schools respond to the challenges laid down in this Estyn report may be determined more by the nature and shift in educational policy in Cardiff Bay than by the need to improve and nourish this most essential aspect of the curriculum.

References

DCELLS (2008a) *Science in the National Curriculum for Wales*. Available at: http://wales.gov.uk/topics/educationandskills/schoolshome/curriculuminwales

DCELLS (2008b) *Making the most of learning: implementing the revised curriculum*. Available at: http://wales.gov.uk/topics/educationandskills/schoolshome/curriculuminwales

Estyn (2011) *The Skills Framework at key stage 2: an evaluation of the impact of the non-statutory Skills Framework for 3 to19-year-olds in Wales at key stage 2*. Available at: www.estyn.gov.uk

Estyn (2013) *Science in key stages 2 and 3*. Available at: www.estyn.gov.uk

PISA (Programme for International Student Assessment), a triennial international survey of over 70 economies, which aims to evaluate education systems worldwide. Available at: www.oecd.org/pisa/home/

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