4. TECHNOLOGY IN THE SCOTTISH PRIMARY SCHOOL

A Twenty-Year Retrospective Study

THE BACKGROUND

In order to understand the development of technology education within the primary sector in Scotland, it is necessary to first consider it within the context of the secondary school. Traditionally technology education or ‘technical’ as it has generally been known in Scotland, was a vocational, predominantly craft-based subject considered most suitable for non-academic boys in secondary schools. It was prescriptive in its delivery and involved engineering based technical drawing and learning how to operate industrial machines. Girls were taught the skills involved in cooking and needlework in domestic science, which later became known as home economics. Boys therefore were in effect being trained to take up employment in the various trades while girls were educated in the art of homemaking. Although both subjects were later made available to both boys and girls, and also to those pupils who were considered more academic, they remained as two separate and distinct subjects within the Scottish secondary curriculum.

At this time, the primary curriculum was essentially holistic in nature. The Scottish Education Department’s Primary Education in Scotland (or The Primary Memorandum) (SED, 1965), on which the primary curriculum was based, was considered revolutionary in its child-centred approach. Its rationale was underpinned by the belief that children should be active participants in learning, and was grounded on the premise that children have a natural curiosity about the world and, most importantly, a natural desire to learn (Paterson, 2003).

This child-centred approach provided teachers, in theory at least, with a high degree of autonomy in the teaching and learning process. This combination of teacher autonomy and a perception of what was known as ‘technical education’ as a vocational subject, ensured that it was firmly located in the secondary sector. Technical education comprised woodwork, metalwork and technical drawing, subjects which were considered to be beyond the capability of the primary schools to deliver (Dakers & Dow, 2004).

This remained the prevalent model until the beginning of the 1980s when a major survey into primary education was conducted by the Scottish Council for Research in Education (SED, 1980). The findings of this survey demonstrated that, rather than the broad, active, child-centred curriculum proposed in the 1965 policy, in practice...
a very narrow curriculum had evolved. There was found to be very little, and in some cases absolutely no technical or science education delivered in primary schools. Contrary to the spirit of the Primary Memorandum, moreover, very little discovery learning and very little curricular integration was in fact in evidence (Adams, 2003).

In 1985 the Committee on Technology set up by the then Scottish Consultative Committee on the Curriculum (SCCC) published a set of recommendations relating to the introduction of technological activities in primary schools with support provided in the form of appropriate resources. Despite this initiative, by 1993 the incorporation of technology into primary schools was found to be uneven and largely unsatisfactory, with an HMI Audit report (Scottish Office Education Department (SOED), 1993) finding that a minority of pupils were achieving a satisfactory understanding in the area.

The concept of technical or technology education in primary schools therefore did not have a strong focus in policy in Scotland until the early 1990s when, in response to the survey mentioned above, primary education underwent a systemic change with the introduction and implementation of the 5–14 national guidelines for the curriculum (Scottish Executive Education Department (SEED), 1991).

1990: 5–14 GUIDELINES

The 5–14 national guidelines were first introduced into Scotland in 1991. These were intended to provide breadth, balance, continuity, coherence and progression to pupils from the first stage of primary school (at age 5) to the end of the second year of secondary education (at age 14). In this way, both the deficiencies identified in the primary curriculum and the problems of transition from primary to secondary school were to be addressed. Unlike the National Curriculum in England and Wales, however these were intended as guidelines only, although in effect they were implemented by all schools in Scotland, at least in the core areas of the curriculum. The curriculum from age 5 to 14 was conceived as comprising 5 broad areas, namely language, mathematics, expressive arts, religious and moral education and environmental studies (which was added after the other areas in 1993).

At this stage, what now became predominantly known as technology education in the primary curriculum in Scotland was introduced as part of the curricular guidelines for environmental studies. This also encompassed the curricular areas of history, geography, science, Information and Communication Technology (ICT) and health education. The rationale behind this particular grouping was that these were all areas within which children could observe and learn from their complex physical and social environment and apply their understanding of these various areas to their own lives (McClelland, 1993). Two attainment outcomes were identified for technology. These were ‘understanding and using technology in society’, and ‘understanding and using the design process’.

Minimum recommended time allocations were provided for each of the five broad areas of the 5–14 curriculum. Language had a minimum time allocation of 20% and mathematics of 15%. Environmental studies also had an allocation of 15% but of course this had to cover the six separate subject areas which it comprised.