A Review of Current A/AS Syllabuses in Design and Technology

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Introduction: The Systems of School Examinations in England and Wales

In England and Wales children and young adolescents are required to follow a common curriculum between the ages of 5 and 16. Between the ages of fifteen and seventeen many of these students will take a public examination called the General Certificate of Secondary Education. In the written component of this examination they will spend two hours or more providing written answers to questions related to a specific subject (e.g. mathematics) except in subjects which have a strong practical bias where appropriate techniques will be used. Typically, above average performing students will take eight or nine subjects across the curriculum. Today many will expect to include a technology and design paper in their choice since such subjects are now part of the national curriculum.

There are variations in practice. For example the grade in a particular subject may be derived from a combination of the written examination and coursework. A major variable is the syllabus which is published by the examining agency. Since there are several agencies (known as Examining Boards) there are several syllabuses each having its own particular focus. Moreover there can be several different syllabuses related to the same subject area. This has been true both of mathematics and design and technology. However, as the national curriculum takes hold the General Certificate of Secondary Education is subject to both change and consolidation. There is now, for example, a substantial amount of coursework assessment. The results which students obtain in this examination have a bearing on their future career at work or, in further or higher education. If they have performed well they are likely to want to go to University in which case they will pursue another programme in school for a further two years. This programme is called the Advanced Level of the General Certificate of Education (A) Again these examin-
ations are written examinations except where there is a practical component and, again the grade may be compiled from a combination of the results of the written examination and coursework. The traditional model in science subjects from which many developments in multiple-strategy examining have been made was for the student to sit two three hour papers and a practical test. Typically students who wish to go to university take three or four such examinations. The subjects they take will be influenced by the entry requirements of the subject and college they wish to enter in the higher education sector. They are thus examinations which have considerable significance in the career line of students.

Just as there are differences between the syllabuses offered by the examining agencies at GCSE so there are differences in their offerings at the Advanced level.

The narrow focus of the Advanced level has been the subject of much criticism. There has been a significant demand for universities to broaden their entry requirement. In an atmosphere of some controversy a new tier of examinations was introduced. It is called the Advanced Supplementary (AS) examination.

Schools and Colleges have always run general or complimentary studies courses, but there has been a tendency for these to be squeezed out. AS-Level courses are intended to be ‘half’ A-Levels achieving the same depth but over a narrower subject area. The first AS Level examinations in Design and Technology were set by Examination Boards in 1989 or 1990 and these are beginning to assume an important place in the range of qualifications gained by 18 year olds. The emergence of these syllabuses is discussed in this paper.

However, the prime focus of this paper is on the problems which the variety of syllabuses pose. It is only in the last decade that issues associated with this proliferation have started to be resolved. Aspects of this process of synthesis are the central feature of this review.

The Changing Pattern of Examinations in Technical Subjects

In 1986 a joint working party of the Secondary School Examination Boards (hereafter referred to as examination boards or boards) was established to respond to a initiative by the Council for National Academic Awards (CNAA). This Council was the responsible agency for validating degrees in the public sector of higher education. The CNAA had taken its own initiative in the area of school technology and had reported on ‘A-Level Design and Technology — The Identification of a Core Syllabus’. The outcome of this response was that all the Examination Boards now offer syllabuses based around this core and other related syllabuses — like those based on Engineering Drawing, Engineering Science or Engineering Design and Woodwork or Metalwork — have been withdrawn or replaced. For example, many of the ideas and approaches associated with the Engineering Science A-levels have been accommodated within new style Physics syllabuses. Most Boards now also offer AS syllabuses. The work of the Inter-Board Working Party and the work done since by the Examination Boards has therefore helped to bring A and AS levels in this subject area to a position of strength they have never really known before. It is difficult to separate cause and effect, but it is clear that the emergence of these syllabuses has been associated with a continuing rise in the number of candidates taking these examinations. Table 1 gives an indication of the growth in total candidates for all the Examination Boards for the period 1987-92.

A more detailed picture of this growth for one particular board is shown in Table 2. This shows the growth in numbers for the Cambridge Examination Board for the period 1986-92. Each Examination Board will have had related experiences witnessing the decline in traditional syllabuses and the growth in those related to the common core.