PRINCIPLES OF COSTING

QUALIFICATIONS AND EXAMINATIONS

73. Costing depends on so many variables (including salary scales, exchange rates, postal charges, the rate of inflation) that the detailed comparative costs of different approaches to qualifications and examinations will vary from time to time and from place to place. It is possible, however, to derive some general principles of costing qualification and examination systems. These principles relate solely to cost and do not take into account whether a particular approach is preferable for other reasons.

74. It is first necessary to decide whether the cost to be considered is for the educational system as a whole; an external qualifying/examining body, whether the latter be national, regional or international; or an internal college system.

The Educational System

75. If the total cost to the educational system is to be considered then the following generalisations are a guide to the likely effect of different approaches:

(a) An external system can have economies of scale which can bring down the unit cost per candidate to below that of an internal system, but there may be hidden costs to a college (e.g. in having to fit its work round set examination dates or having to use prescribed materials in practical tests instead of those locally available). However, a small scale external system may have fairly high unit costs.

(b) A completely internal system in which each college examines and awards qualifications to its own students without any external examining or validation is likely to be the least expensive provided three criteria are met

(i) The college is able to make use of existing expertise and administrative resources. If additional staff have to be appointed, then the cost advantages of an internal system are dissipated.

(ii) The college is able to combine its teaching requirements with those of testing students and awarding qualifications.

(iii) Separate colleges are not preparing and marking nearly identical examination papers. Such duplication of effort between colleges can soon become more expensive than any duplication involved in an external examination system.

(c) Validation is likely to have higher costs for the system as a whole as there is a duplication of work between the college and the external body; the level of costs will vary in relation to the extent to which the validating body involves itself in the college work.

External Systems

76. Within an external qualifying/examining system a distinction has to be made between capital and operating costs. Capital costs are normally incurred for development work on examination syllabuses, question banks, computer programming and machinery, and operating systems.

77. Examination syllabuses normally have a maximum 'shelf life' (a reasonable average is about five years) before they are revised or replaced and so if the capital costs are not covered by an outside development grant, they have to be 'recovered' within that period. In practice most examining bodies do not see this as recovery of capital but as providing a surplus for new development work or revision. The problem is that the development cost of a syllabus is likely to be the same whether there are 10,000 candidates or 10.

78. Banked questions also normally have an average 'shelf life' of about five years. Although the capital costs are high, the operating costs of objective questions are extremely low and the capital costs can probably be recovered (or a surplus obtained for renewals) over five years if there is a reasonably large annual candidate entry. The critical size of entry will vary but is unlikely to be less than 200 candidates, and will often be nearer 500. Banked questions which are not objective in format will save the setting costs each year, but not the marking costs. Recovery of capital costs over five years will depend on the relative costs of the proportion of full-time staff involved in the setting process compared with the fees for marking.

79. Computer programmes and machines also have a limited life. Although it may be longer than five years, it is probably wise to try to recover the development costs within a limited period.

80. Operating systems should have a longer life than five years, possibly so much longer that it is not necessary to consider recovering the development costs within a set period, but this would depend on the accounting policies of the body concerned.

81. The long-standing UK examining bodies have been able to spread their initial high capital development costs over quite long periods of years while ploughing back candidate's fees, whereas new bodies are likely to have very high initial costs before any income is obtained.

82. Operational costs contain a number of elements including

(a) fixed overheads

(b) general operating costs which are related to the total throughput of candidates in all examinations (e.g. postage, examination stationery, examination timetable printing)

(c) specific operating costs which are related to individual examinations

(d) recovery of development costs for specific subjects.

In many external examination systems the sum total of elements (c) and (d) is greater than that of (a) and (b), so the subjects with large numbers of candidates tend to have very low unit costs and those with few candidates have high unit costs. Where the examining bodies are non-profit making bodies, the surplus generated by additional candidates is either ploughed back into development work or used to keep down the cost to the candidates. Examining bodies tend to average out their costs over the full range of examinations, but are concerned if they have many examinations with very few candidates as these raise the average unit cost. In these circumstances candidates in the large number subjects are effectively subsidising those taking the smaller subjects.

83. In traditional style examinations the capital cost of a specific examination lies in the development of the examination syllabus, either initially or as a replacement. The operating costs include the setting, printing and marking of a new paper for each examination and so are comparatively high. While the marking costs are constant for each candidate, the setting and printing costs, like the development costs, can be averaged out over all the candidates, so the unit costs fall quite rapidly as the number of candidates increases.

84. As already noted, where questions are banked the development costs of the bank are high but the operating costs are low. This is particularly so in the case of objective questions which can be marked by machine. In this case a smaller proportion of the operating costs are incurred per candidate and a larger proportion are spread over all the candidates, so with a large candidate entry the unit costs fall even lower than with traditional examinations.

Internal College Systems

85. In order to carry out its proper function as a teaching institution a college has to have:

(a) a teaching syllabus to which its lecturers work

(b) a system of testing students to monitor their progress and provide feed-back on the effectiveness of the teaching

(c) records of past and present students.

86. Although these requirements are less rigorous than those for qualifications and examination where the syllabus has to be a matter of record, the tests have to have the attributes described in paragraphs 44-63 and the records of students may have to be kept for the duration of a working life or longer - perhaps half a century. However it should be possible to design a college system which incorporates the more rigorous requirements and also those which a college has to undertake as a teaching establishment (paragraph 85). If this can be done then the cost of a college system can be kept reasonably low.

Validation

87. A validation system differs in cost terms from a completely internal system in that the college is partially involved only, normally for testing with the examination syllabus provided or agreed by an external body, which also awards the qualification and is responsible for the special records. As noted in paragraphs 69-71 the resource requirements of validation will vary according to the extent to which the qualifying body involves itself in the work of the college. The more it so involves itself, the greater the cost to both parties and to the system as a whole.

Conclusion

88. If costs were the only consideration (and in qualifications and examinations they seldom are), there is little doubt that using a well-established high throughput external examining body is likely to keep the candidate unit costs lower than any other system, provided standard examinations are used. If there is a requirement for a large number of local specialisms, then a college-based system (possibly with low investment validation) is likely to be more economic.