The Banking of Multiple Choice Questions

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The advantages inherent in the use of multiple-choice questions (MCQ) have been apparent for a good many years, but their application on a wide scale demands effort, and expertise. This is one of the reasons why their use in the past has been restricted. The use of objective techniques including MCQ has enabled examiners and teachers to become aware of deficiencies in examination systems, the nature of which would not be tolerated in any other measuring instrument.

The presence of such a quantity of routine calculation with the procedure [of MCQ examinations] has led naturally to the idea that computers should be used to speed up, and improve the accuracy of the results. Indeed, several systems have been published, including our own.

The production of an MCQ paper is a complex and time-consuming operation, both in examiner and secretarial time. The scope for the introduction of spelling and other typographical errors is considerable, and this must be considered at every step. It is therefore necessary for some form of automation - or at least some defined structure of operations - to be introduced. Such a system would incidentally also serve as a means of filing the accumulated item analysis statistics from the scoring programme in association with the question text, enabling these statistics to be more easily extracted and studied.
The requirements for a question bank system may therefore be summarized. The system should be capable of automation using computational facilities; it will act as a filing system; it must alleviate secretarial overloading; it must be offered at a price which compares favourably with existing methods; it must interface with the scoring and analysis procedure; and it must open new avenues of research. We show here how such a desirable state of affairs has been at least partly realised.

Summary:
In the expanding field of objective testing using multiple-choice questions, it has proved possible to score and analyse examinations using computers. This facility has itself enlarged the demand and revealed difficulties in the construction of suitable assessment material. These difficulties are reduced when a centralised ‘bank’ of questions is used. While the centralised ‘bank’ is maintained by computer, the originators should retain control of their own material and have easy access to it. This latter is provided using specially designed computer cards containing the question text and a reference code.

While originators retain ownership, they may be encouraged and assisted to make ‘free-trade’ agreements with others having similar interests. In this way, each user gains access to more material than he can devise himself, and the material is also more widely used. This arrangement is preferred to a ‘test-committee’ structure. It is felt that further development of such a system is best carried out in a university department.