

## **Methods of analysis of multiple-choice examinations and questions**

M.D.Buckley-Sharp, F.T.C.Harris

British Journal of Medical Education (1972), **6**, 53-60

Every examination contains two components: the performance of the candidates and the performance of the questions. Analysis of examinations, and their contained questions, is easier for objective-type papers where computing facilities are available, but is also possible with subjective-type tests, particularly where problems of data collection can be overcome. Various methods exist whereby questions and examinations may be analysed, but these have previously been chiefly applicable to the one-from-five type of multiple-choice question. In order to deal with 'indeterminate' questions, published statistical methods have been expanded.

Methods of obtaining facility indices, and a don't-know index for questions, are described and compared. Methods for obtaining question discrimination coefficients are discussed, together with factors which affect their interpretation. It is concluded that available discrimination coefficients give essentially similar answers.

Some of the procedures for handling question analysis data and relating it to the Middlesex Hospital Medical School question bank are described.

The paper included: The Facility index; The Don't-Know index; Comparison of Middlesex and Glasgow item analysis; Discrimination indices; Interpretation of the discrimination index; Examination reliability; Other intercorrelation methods; SCORE8L output for the question bank.