

AN ANALYSIS OF THE RESULTS OF A MEDICAL EDUCATION WORKSHOP ON STUDENT EVALUATION

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SYNOPSIS

An educational workshop on student evaluation was recently held for the staff of the Faculty of Medicine. Participants included teachers from both the basic science and clinical departments. The workshop technique employed and the usefulness and effectiveness of the workshop itself are discussed.

INTRODUCTION

"Examinations are formidable, even to the best prepared, for the greatest fool may ask more than the wisest man can answer"

C. C. Colton (1836)

It is important for new as well as experienced teachers to refurbish their ideas on student evaluation from time to time. This enables them to determine if progress and change has occurred in evaluation concepts and techniques and to exchange ideas about common problems and difficulties of measurement which, usually, concentrate on the cognitive domain with little attention paid to the measurement of skills or attitudes.

A workshop on student evaluation was recently held for the staff of the Faculty of Medicine, University of Singapore. The workshop technique was chosen because it has the virtue of making all the participants work on common tasks. This educational technique was first employed by the World Health organisation in its workshop on medical education in Teheran in the early 1960's; it has continued to be a useful method for encouraging the sharing of educational ideas and to promote "... active involvement by each participant; the whole point of attendance is to work and to learn from practical experience" (Guilbert, 1977).

The present workshop was designed to deal with the problems of student evaluation in examinations during the medical course. The major problems in the performance of this task arise not only with the measurement of factual knowledge, but with the assessment of different kinds of skills and of the attitudes the students are expected to have acquired.

The whole workshop was also designed such that it was consistent with the philosophy of evaluation of behaviour change at the end of a course of instruction (Gale, Anderson, Freeling et al, 1974), even though the duration of the workshop was rather short. One of the basic assumptions made was that most, if not all of the participants, would

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have had both experience and appropriate knowledge of methods of evaluation and their effectiveness. The aim of the course was, therefore, to increase this knowledge in scope and depth.

This communication reports the results of and experience gained from the workshop which may be useful to local medical organisations intending to plan similar educational workshops.

METHODS

The teachers attending were drawn from both the basic sciences and clinical departments, the Dean having requested Heads of departments to propose participants for the workshop. After an introductory talk on the scheduled topic participants were divided into three groups with eight to ten persons in a group. Each group had a resource person and several of the members of each group were assumed to be aware of group dynamics as they had attended similar workshops previously. Each group appointed a reporter whose function was to summarize the group proceedings after each task had been completed. The groups had about an hour to deal with each task. The tasks chosen dealt with purposes of examinations, determinants of examination scope and depth, usefulness of different methods of assessment, both, to the student and the teacher and usefulness of generating appropriate feedback to improve learning (Table 1).

Table 1. Group tasks performed by participants of the workshop. About 1 hour was allowed for each task, after which a summary of the group discussions was presented by the reporter at the joint group sessions.

1. How well does the present examination system evaluate the budding professional? Do we examine what has not been taught? If so, how do the students know what to learn?
2. What is the relationship of educational objectives to evaluation? Is it necessary to have both student and teacher objectives to solve this problem?
3. Mark the essay and the short-answer question (20 marks maximum for each question). What do you think the examiners' objectives were? Can you show how you reached your evaluation?
4. Design two multiple choice questions of each type to illustrate cognitive knowledge in the basic sciences and clinical areas.
5. How would you evaluate the skills of students in a basic science discipline and in the clinical area?
6. What would you do to make the oral exams more reliable and valid?
7. What use would you make of attitudinal data if available? What methods are there of finding it out?

Appropriate documents were developed by the course administrators sometime previously and a preliminary document was given to participants about a week before the workshop. The remainder of the documents were given to the participants during the registration procedure (Table 2). The course duration was, due to administrative reasons, only for one and a half days.

Table 2. A listing of documents provided to participants before and at the start of the workshop.

Before Workshop:

1. Purpose of Workshop
2. Suggested Reading List
3. Workshop Programme with Listing of Topics

At The Workshop:

1. Objectives Of The Workshop
2. Detailed Programme Schedule
3. Cognitive and Attitude Tests
4. Group Procedures and Group Tasks
5. Introduction To Problems of Educational Evaluation
6. The Relationship of Objectives To Evaluation
7. The Usefulness of The Essay and Short-Answer Questions
8. The Multiple Choice Question (MCQ)
9. Evaluation of Basic Science and Clinical Skills
10. Oral Examinations
11. Evaluation of Attitudes
12. Statistical Procedures for Analysing Performance
13. Feedback to Student and Teacher

Before (pre-test) and at the end (post-test) of the workshop, all participants were given questionnaires dealing with the teacher's knowledge of medical education and its terminology together with an attitudinal test directed towards attitudes to teaching and learning. This was an attempt to emphasise the importance of measuring entry and terminal behaviours of participants.

Participants were also given two evaluation questionnaires: the first dealt with the overall rating of the workshop and its sessions and contained a statement about personal satisfaction with the workshop; an assessment dealing with the effectiveness and usefulness of the group tasks was also incorporated into this questionnaire. The second questionnaire dealt with the reasons for attending the workshop and about places and times that might be suitable for planning of future workshops.

RESULTS

The pre- and post-test results in the cognitive domain showed that there had been a significant gain in knowledge ($P < 0.02$). For the attitude test there was no significant change in the scores which indicated favourable attitudes to medical education and learning. Only one teacher had a lower attitude score in the post-test but others were equally positive in the opposite direction. Usually with experienced teachers attitude scores are so favourable that it is difficult to show any significant change using a Likert test (see Abarquez, Makki, Gwee & Kawaguchi, 1978-79) and it was true on this occasion as well.

There were some low to average ratings in regards to the evaluation of the organisation of the workshop and its value. While the appropriateness of the topics selected showed mean values of 5.3 on a rating scale of 1 to 7 (representing poor to excellent rating), the scheduling of the programme was only rated at 3.8. The value of the workshop was rated at 4.5, knowledge gained from it at 4.2 and satisfaction derived from it was rated at 4.6. Generally high ratings were obtained for the evaluation on the effectiveness and usefulness of group tasks. The range obtained was from 4.6 for the clarity of group tasks as stated in the handout to 5.8 for the opportunity to develop rapport with colleagues from other departments.

Although most participants indicated that attendance at the workshop was voluntary, about one-third had been proposed by their respective heads of departments. Only one out of the twenty participants who completed the questionnaires attended "simply out of curiosity"; one participant also indicated that his attendance at the workshop was due to the influence of his colleagues. No one had the intention to escape from the daily routine by attending the workshop and only two participants thought it was a waste of time.

In general most participants suggested that the workshop should have allowed more time for discussion. It was also felt that the venue in the medical school could have been better, especially in regard to the physical circumstances and it was suggested that it be held outside the Faculty. The majority (90%) indicated that they would like to attend another workshop based on the present experience.

DISCUSSION

The organisation of the workshop appears to have been satisfactory except for the problems of scheduling the time for group discussions. During the workshop it became obvious to the resource persons that more time was needed for more meaningful discussion. Inevitably group work takes time. Usually this type of workshop is scheduled for three days and so we were rather ambitious to try to reduce this time. Perhaps if the entry level of knowledge of the participants had been higher a shorter period might have sufficed. As it was many important issues were missed not only because the time was short, but because some of the participants did not understand the educational terminology that was necessary. Most found it intellectually demanding but felt that the pace was too quick.

The lack of knowledge of educational terminology was reflected in the rather low scores on the cognitive and MCQ-test. This suggests that a glossary of terms should have been sent out with the initial documents. It might also have been useful if the complete documents had been available a few days before the meeting. However, when this was done in the past, they were often not read until the day of the meeting. In general we doubt if there is

any better method of reaching a higher level of entry behaviour. The change in cognitive knowledge was significant and this behavioural result may reflect the appropriateness of the group tasks and the group resource persons.

The majority of participants were experienced teachers whose attitudes, when first tested, were favourable to medical education and learning. It was not surprising, therefore, that these attitudes had not changed by the end of the workshop. At least participation at the workshop did not produce a negative effect by lowering the motivation of the teachers, even though some felt that what was done was not very appropriate. However, the responses to the evaluation questionnaires indicated that the majority felt it was appropriate and relevant.

In regard to the group tasks a reasonable success was achieved even though the organisers felt that the timing of the discussion was too short. It is important to bear in mind that it does take a considerable time for members of a new group to probe each other before a group understanding can be reached for it to become reasonably functional. This appeared to be one of the forces preventing us from using short time periods with this technique. There is little evidence, in any case, to show that persistent behavioural change in teaching and learning can be achieved by other means, namely, a series of lectures.

Overall the major problem was the period of time allocated to group tasks. Groups were not able, even with support, to meet the deadlines so that future workshops should remedy this problem. Moreover, the workshops should be off the medical campus in order to avoid seminar participants being too easily reached about daily problems. Few seem to have been deflected from their educational interests and most would like to attend further workshops.

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REFERENCES

1. Abarquez, Lupe, Makki, A., Gwee, M.C.E. & Kawaguchi, Y. Some Guidelines On The Use Of Attitude Measurement In Medical Schools. Newsletter of The Centre for Medical Education, The University of New South Wales, December 1978-January, 1979.
2. Gale, J., Anderson, J., Freeling, P., Pettingale, K.W. & Tomlinson, R.W.S. Planning An Educational Course — A model Of The Management Of An Educational Workshop For Teachers of Medicine. *Brit. J. Med. Ed.* 8: 87-91, 1974.
3. Guilbert, J.J. Educational Handbook For Health Personnel, WHO Offset Publication No. 35, World Health Organisation Geneva, 1977.