



STUDY GROUP ON THE TRAINING AND PREPARATION OF
TEACHERS FOR SCHOOLS OF MEDICINE AND ALLIED
HEALTH SCIENCES

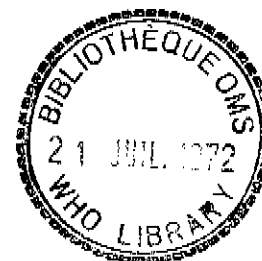
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TEACHER-TRAINING PROGRAMME FOR HEALTH PERSONNEL
AT THE HEBREW UNIVERSITY-HADASSAH MEDICAL
CENTRE IN JERUSALEM

by

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1. The problem

Medical educators are probably more aware of, and concerned about, their limitations and short-comings as teachers than almost any other group of university educators. This high degree of awareness and concern is reflected in the growing number of courses in teacher training. The creation and expansion of departments of medical education, one of the major concerns of which is the improvement of teaching, have been most valuable in this regard.

These efforts should not be regarded as manifestations of an inferiority complex. On the contrary, they express recognition of four basic facts:

- (a) Since medicine is both an art and a skill, the teaching of medical, dental, nursing and allied health students has broader dimensions than in the case of other university disciplines;
- (b) scientific and clinical knowledge is expanding at a rate which makes the selection of teaching material more and more difficult as it becomes more and more imperative;
- (c) no pedagogical preparation is required, or in most cases even offered, to prospective medical school teachers. Usually they start to teach as young residents and are automatically assigned to their teaching duties. It becomes a case of "sink or swim". While there are, of course, born teachers, the majority flounder along having neither the necessary predisposition nor preparation;
- (d) the academic and financial recognition of teaching falls far below that of research. Hence, there is a need for strengthening motivation through self-satisfaction from a "job well done".

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It is obvious that teaching requires a sound knowledge of subject matter; however, it should be obvious that even an excellent scientist or clinician will not necessarily be an excellent, or even a good, teacher.

At the beginning of his professional career, the young physician has at least a basic subject matter competence, but only seldom has he had the opportunity to acquire even the rudiments of educational theory or practice. At best, he may have absorbed some "tricks of the trade" from one of his more efficient teachers. Teacher training thus becomes a vital necessity in any academic medical institution.

2. The teacher-training courses

2.1 Objectives

The Department of Medical Education of the Hebrew University-Hadassah Medical School (established in 1965) considers the provision of teacher training as one of its foremost, on-going responsibilities. Therefore, in 1969 it initiated its first teacher training programme, the aims of which have been to:

- (a) Teach teachers the fundamental psychological and philosophical concepts of the teaching-learning process,
- (b) acquaint teachers, in as short a time as possible, with the practical skills necessary for designing and reviewing a curriculum, for planning instructional strategies and for evaluation,
- (c) expose teachers to the potential instructional technology and demonstrate its use as a teaching aid,
- (d) teach teachers to produce and integrate specific media into their own subject areas,
- (e) initiate teachers in the basic concepts, tools and methodology of educational research, and
- (f) create a cadre of teachers who will be personally interested in teaching, in innovating and in providing "educational leadership" in their respective departments (basic sciences and clinical).

2.2 Implementation

The training courses for teachers conducted during the 1969/70 and 1970/71 academic years were each divided into three, three-month units (Parts 1, 2, 3). Each of these units concentrated on a specific self-contained entity in the field of education. This made it possible for participants to attend any, or all, of the three courses according to their individual needs and interests.

The two-hour weekly sessions were conducted as informal discussion groups. Participation was entirely voluntary, and no credits or other forms of formal recognition were earned. Members of the staff of the Department of Medical Education, the School of Education of the Hebrew University, visiting lecturers from the Ministry of Education and from the United States of America (Dr J. Zacharias, Director of the Center for Educational Development at M.I.T., Dr L. Shulmann, Professor of Educational Psychology and of Medical Education at Michigan State University, East Lansing, Michigan, and Dr B. Choppin of Teachers College, Columbia University) conducted individual sessions.

The majority of the participants took at least two of the three months' courses. Attendance rate ranged between 25 and 40. Participants' specialties included most of the basic sciences, clinical disciplines, dentistry, nursing, occupational therapy, etc. The full range of the academic teaching hierarchy was represented - from first year residents to full professors. The deans of both the medical and dental faculties participated in many of the sessions.

Prior to the beginning of the instructional programme of Part 1, a pre-test was administered to the participants. It served as a guide for determining the course content and was also used for self-evaluation at the end of Part 1.

Part 1 of the course dealt mainly with educational planning and evaluation. The areas covered included:

- (a) judgement and evaluation of objectives;
- (b) production of objectives;
- (c) blueprinting of course;
- (d) judgement and evaluation of test items;
- (e) production of test items and an item bank;
- (f) analysis of test and item data;
- (g) judgement of educational evaluations; and
- (h) planning educational evaluation

At the end of Part 1, participants were able to produce a set of objectives and outline an educational experiment to study the attainment of these objectives. The plan was judged on the basis of criteria of educational research, and had to be feasible in the specific setting in which the participant planned to implement it.

Part 2 was organized as an advanced course in the testing and evaluation of medical education and in the design of educational research. More emphasis was placed on the construction of objective tests and on the statistical analysis of test and item data:

- (a) item difficulty level (P value);
- (b) total test difficulty;
- (c) test mean;
- (d) test standard deviation;
- (e) percentage of students selecting each alternative;
- (f) item discrimination index;
- (g) item-test correlations;
- (h) test reliability.

Part 3 concentrated on methods of instruction. The topics covered included:

- (a) improving the effectiveness of lectures;
- (b) the use of discussions and seminars in teaching;
- (c) new developments in laboratory teaching;
- (d) bedside teaching in clinical medicine;
- (e) audiovisual media in medical instruction;
- (f) self-instruction;
- (g) micro-teaching;
- (h) uses of simulation in medical education; and
- (i) medical students' criticisms of their instructional experiences.

It was most exciting to see such a heterogeneous group (as far as specialties and academic rank were concerned) join together, as students, in a common effort to improve their own teaching and the entire teaching-learning process at HUHM Center.

2.3 Results

As a result of the course, the majority of the basic sciences, departments and all of the clinical disciplines have introduced objective written examinations to replace oral and written essay type examinations. Clinical competence and practical skills of undergraduate students and young teachers are now being evaluated with the aid of specially constructed observational check lists.

Teachers who participated in the course have played leading roles in educational innovation, within their respective departments and have become effective "liaison-men" between the members of their own departments and the Department of Medical Education, and some of them are currently conducting experimental teaching and educational research together with, and under the auspices of, the Department of Medical Education.

The role of the Department of Medical Education changed considerably as a direct result of the teachers' training programme: the provision of educational services began to assume an importance equal to that of research.

This was concretely expressed in the following activities:

- (a) The Department now provides consultant service, on an individual and departmental basis, for:
 - (i) curriculum development;
 - (ii) instructional strategies; and
 - (iii) the integration of audio-visual aids into on-going teaching programmes.
- (b) The Department was requested to assume responsibility for the evaluation of different teaching programmes and courses in the entire Medical Center;
- (c) the Curriculum Committees of the Medical and Graduate Schools have recommended that the teachers' training programme become an accredited elective course for graduate students in Basic Medical Sciences (Ph.D.) and for residents in the various clinical departments.

Following this last decision, a special course was designed and offered in 1971/72. The 12 students meet for two hours each week during the entire academic year.

The first trimester was devoted to the analysis of common teaching methods, such as: lectures, discussions and seminars, laboratory work, demonstrations, simulations, the use of audiovisual aids and audiotutorial instruction.

Reading material consisted of selected chapters of G. Miller's Teaching and learning in medical school.¹ In addition Eros and education by J. J. Schwab² was used as a basis for deeper consideration of the teacher-student interaction especially in seminars and discussions.

The second trimester was devoted to actual training in teaching. The BSCS invitations to enquiry were used as the teaching materials. The students were grouped in pairs; each pair chose one invitation to enquiry either from 40 single topic loops³ or from the 20 day-light inquiry slide programmes.⁴ Each pair taught the class for about 45 minutes. The lesson was videotaped and later, in the second half of the meeting, the videotapes were shown and analysed by the group. These teaching experiences have been considered highly valuable by both students and instructors.

The third trimester will be devoted to evaluation.

The following topics will be discussed: the role of evaluation, formulation of instructional objectives for the purpose of evaluation, construction and analysis of objective tests, practical and laboratory examinations, oral examinations, the use of feedback in course evaluation and reconstruction. The students will operate like a workshop and will have an opportunity actually to practice various aspects of test construction and analysis.

It is hoped that such a course on teaching methods will not only contribute to the development of teaching skills by its participants but will also raise the awareness and interest of all teaching personnel in upgrading instruction. It is also recommended that this course, or a similar one, should be required of each resident and assistant who is to become an instructor in the medical school.

2.4 Evaluation of the teacher training course at HUHMC in 1972

Thirty-two two-hour weekly sessions were held from November 1971 to June 1972. The topics described earlier were covered according to plan with the regular participation of all registered students. At the end of the course, the students were requested to offer their comments, criticisms and suggestions. The following is a summary of these comments:

- (i) Generally speaking the course has met the expectations and was very interesting.
- (ii) The style of presentation in demonstrations and discussions as well as the actual involvement of students based on their own experiences contributed a lot to the success of the course.
- (iii) The simulated lessons using microteaching techniques made it possible for the participants to discover hitherto unrecognized problems as well as possibilities and options concerning teaching. I was glad to be able to view myself and learn from comments made.
- (iv) Inquiry teaching as demonstrated and actually practised will undoubtedly be adopted by participants as a significant component of their teaching repertoire.
- (v) The audiotutorial method as a way of individualizing instruction looks both interesting and effective and should be implemented within the regular curriculum.
- (vi) More attention should be given to preparation, and to the actual ways of lecturing and conducting discussions aimed at various levels of thinking.

(vii) The treatment of testing and evaluation is very important and more time should be devoted to topics such as construction of test items, construction of laboratory examinations and analysis of test results.

(viii) We enjoyed the course and learned a lot. We now know that there is much "know-how" that can be learned about instruction.

A very interesting comment was made by all participants: since teaching is so important and so much can and has to be done to improve it, the university should ensure successful instruction and include it as a significant criterion in promotion. A course of this kind should be taken by all teaching faculty including senior professors.

I may add that if one really wants to increase the interest of the faculty in teaching, teacher training courses should be made a pre-requisite for receiving teaching assignments in the medical school.

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2. Schwab, J. J. (1954) Eros and education., J. Gen. Educ., pp. 51-71, University of Chicago Press
3. BSCS Single Topic Inquiry Films. Harcourt, Brace & World, Inc., New York
4. BSCS Inquiry Slides for Daylight Blackboard Projection Developed by the BSCS and produced by Guidance Associates of Pleasantville, N.Y., Harcourt, Brace & World, Inc.