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Teaching in medicine: an elective course for third-year students

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Summary. An elective course titled 'Teaching in Medicine' was given to eight third-year medical students in response to the policy of the University of British Columbia medical school to expand its elective offerings. Course objectives focused on the skills that doctors need to fulfil their role of teacher of patients, students or colleagues. Instructional methods included directed reading, group discussions, microteaching, evaluation of videotaped samples of teacher behaviour, role play, demonstration and practice in developing and using audiovisual materials, and analysis of research in teaching and learning in medicine. The course culminated in each student presenting a major teaching session which was videotaped and assessed by the student and course teachers. All students rated the course as excellent. This paper describes the course and the teacher and student perceptions of it. The experience of this medical school is that a course of this nature is extremely worthwhile.

Key words: *Teaching; *education, medical, undergraduate; Canada; curriculum; attitude of health personnel

Introduction

The University of British Columbia Medical School offers a traditional programme of 2 years' study in basic sciences followed by 2 years' clinical experience. During the second half of third year students are offered an elective programme from which they must select two courses. Until recently these courses have been additional basic science courses such as microbiology or neuroanatomy. Lately, however, the school has adopted a policy of expanding the elective programme to include courses that further students' liberal education.

Doctors assume many roles other than that of patient care provider. Teaching, be it of patients, students or colleagues, is a frequently called-upon skill for which little, if any, formal training is given. Residents, with no preparation, are required to spend as much as 20–25% of their work time in clinical teaching (Jewett *et al.* 1982). In response to this educational deficit a course in teaching, not usually offered in medical schools, was designed for up to eight students and offered for the first time in 1986. This paper describes the course, its reception by the eight students and observations by the teachers.

Course description

Thirteen 2-hour sessions were allocated to the course, and an additional 3 hours of study time per week was allotted for assignments. True to the medical work ethic, classes commenced at 0800 h and students were obliged to leave promptly in order to reach their respective hospitals. When designing the course, skill training and self-evaluation rather than educational theory and teacher evaluation were emphasized. Terminal objectives were that students would be able to:

(1) design an instructional session of any length;

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(2) demonstrate effective teaching behaviours;

(3) evaluate own teaching behaviours.

Consequently, a major activity was the planning for and teaching of a session of their own choice.

To pass this course students were required to:

(1) complete assignments and attend;

(2) produce a lesson plan for their own teaching session;

(3) demonstrate certain teacher behaviours discussed during the course;

(4) demonstrate an ability to evaluate their own performance recorded on videotape by identifying strengths and weaknesses in meeting established criteria and setting goals for improvement.

Grades for all elective offerings were pass–fail–honours. To obtain honours standing in this course, a necessary but not sufficient condition was the submission of evidence of additional reading in medical education in the form of bibliography cards. Notes on these cards were to follow the criteria for evaluation of a research report or article as shown in texts such as Isaac & Michael (1971) and adhere to one standard bibliographic style. The purpose of this exercise was to prepare those students who were particularly interested in medical education to analyse literature and by so doing, develop a scheme for their future writing.

A syllabus describing the educational philosophy, major objectives, timetable, evaluation methods, plans for each session, assignments and required readings was prepared. The statement of philosophy expressed beliefs about students as mature learners and listed a number of learning principles to which teachers adhered. For example, learning is an experience which occurs inside the learner and is activated by the learner; no one directly teaches anyone anything of significance; learning is facilitated in an atmosphere which encourages people to be active and which engenders mutual respect and acceptance. As one's philosophy dictates to a large extent the type of teacher one is, the course teachers considered it important to enunciate theirs.

The introductory pages of the syllabus were followed by lesson plans for each session. These plans listed specific objectives for the session, the activities designed to meet them, and the assignment as preparation for the next session. The first session was devoted to introductions, explanation of the course and clarification of students' definitions of teaching and learning. The assignment for session 2 was to complete two sections of a self-instructional module on Writing Learning Objectives produced by the Centre for Teaching and Learning, McGill University (Pascal & Geis 1977). In session 2 students applied this knowledge by writing objectives for a 10-minute 'microteach' which they presented in session 3. This brief sample of their teaching was videotaped, viewed privately by the student and then discussed with the course teachers.

Sessions 4, 5 and 6 focused on analysis of teaching behaviours. A list of behaviours developed by the Teaching Improvement Project Systems (TIPS), Center for Learning Resources, University of Kentucky and shown in Fig. 1, formed the basis of discussion and were the criteria against which students ultimately evaluated their own performance. Each behaviour on the list was illustrated by trigger tapes. A major emphasis was placed on questioning techniques, and students completed part of a self-instructional module on questioning (Craig 1979). Professor Kingsfield in the introductory minutes of the movie, *The Paper Chase* provided an excellent introduction to the topic of questioning and triggered a discussion of intimidation by teachers.

Sessions 7 and 8 were devoted to consideration of how desirable teaching behaviours could be exhibited with patients, during discussion and at bedside rounds. In the latter session each group of four students prepared and presented a role play of bedside rounds with one person as a patient, one as a resident and two as students.

Assignments included readings such as Foley *et al.* (1977), Irby (1978) and Mattern *et al.* (1983). Copies of these articles were in the syllabus and were accompanied by a list of study questions to aid analysis of the paper.

Examples of questions are:

— What was the purpose of the study?

— Why was a selection of non-respondents interviewed? Was this step necessary and if so why?

— What were the author's conclusions? Are they supported by the data or arguments offered?

— What are your conclusions?

Session 9 was spent in the Department of Biomedical Communications where a slide pre-

Instructional set	F	D	N	Notes
(1) Introduced content area				
(2) Established mood and climate				F=Facilitating
(3) Motivated students to learn				D=Distracting
(4) Related utility of the skill				N=Neutral
(5) Established a knowledge base				
(6) Stated objectives clearly				
Presentation (lecture) techniques				
(1) Organized content				
(2) Introduced resource materials				
(3) Used visuals, examples, illustrations				
(4) Clarified technical terminology				
(5) Used emphasis techniques				
(6) Used notes but allowed for eye contact				
(7) Responded to student feedback				
(8) Evaluated student understanding				
Closure				
(1) Introduced no new materials				
(2) Summarized major points				
(3) Provided sense of achievement				
(4) Related to set for cohesion				
Teacher tactics				
(1) Involved students in the lesson				
(2) Provided reinforcement and feedback				
(3) Utilized questioning techniques				
(4) Exhibited enthusiasm for lesson				
Verbal and non-verbal behaviours				
(1) Voice				
(2) Eye contact				
(3) Gestures				
(4) Movement				
(5) Use of silence				
(6) Facial expression				

Figure 1. Teaching behaviours.

sentation on how to (and how not to) design slides was given. Some priceless examples, collected over the years by the department, illustrated the disastrous forms some slides can take. The students then designed a transparency using a demonstration kit of graphic art supplies provided by the 3M Company, Vancouver. Finally, a tour of the department showed students a variety of resources at their disposal.

Session 10 considered assessment of teaching

by students and evaluation of student learning. By analysing a written case study of a real but anonymous teacher who had received blistering student evaluations, the students were required to diagnose problems from the information given and suggest how these could be resolved. An in-house study of interrater reliability conducted by one of the authors illustrated sources of error in scores derived from oral examinations, and students were asked to devise strategies for reducing these errors.

Sessions 11 and 12 were unscheduled to allow students time to complete their major task, teaching an event of their choice. Each event was videotaped and attended by course teachers. Afterwards, students viewed the tape and rated it against the criteria shown in Fig. 1. They then discussed their performance with teachers, whose role was to serve as a 'mirror' for the student rather than as an evaluator. The final session was spent reviewing what had been learnt, evaluating the course, suggesting changes in the syllabus and saying goodbye.

The course was taught by the two members of the Division of Educational Support and Development in the Health Sciences, except for the session on audiovisual aids which was given by a graphic artist. The primary author was the principal teacher; the second author taught two sessions. Both hold doctoral degrees in education and collectively have worked in medical and health professions education for 25 years.

This section has described the course structure. Following is a selection of teachers' and students' observations and perceptions, which although anecdotal, provide food for thought.

Teacher and student perceptions

The course teachers recognized that they would be role models and that their own teaching behaviours must be exemplary and honest if they were to convince students that teaching is important. Hence, they spent considerable time planning each session and tried to include a variety of teaching methods. Modules and readings provided information and the sessions were used for discussion of the study questions accompanying the readings, analysis of taped teacher behaviour, microteaches, application exercises, problem-solving and role-play.

The appraisal and jockeying that goes on in a first class is always interesting and the first class was no exception as it was obvious that some students were sceptical about the value of this course in their medical education. Not all students had elected the course as first or even second choice; allocation to electives gave everyone one first choice and then a slot with empty places. After introductions and a 'walk-through' the syllabus students filled in the outline of a human with descriptions of the knowledge, skills and attitudes of their 'ideal' doctor. Idealism had not completely died but had been scarred by their education; one student thought that a doctor should have a 'super-capacity memory and be able to work under constant pressure'. This exercise was discussed in relation to what a medical school is trying to achieve. The next activity asked students to think of effective and ineffective teacher behaviours that they had observed. First on the list was 'intimidation'. When asked what teachers do to intimidate, one student parodied a teacher and, with all the scorn at her disposal, said 'How did *you* get into medical school?' Second on the list was 'arriving'; not arriving on time but simply showing up. Waiting, as a time-waster, seemed to be common and given the departmental scramble for curriculum hours, inexcusable. Another behaviour was ability to give constructive criticism. Further questioning elicited the perception that students receive very little praise or encouragement from their teachers, an observation which supports the findings in a study of differing perceptions of feedback by teachers and students (Gil *et al.* 1984).

After two or three sessions the group seemed to flower; perspicacity, liveliness and conscientiousness became the hallmark of these students. They particularly enjoyed the role-play, an activity in which they had never engaged. One student, who played the part of a patient, forcefully let the others know how he felt about being the subject of a discussion about him but from which he was excluded. The biomedical communication session was held during a stressful week of end-of-rotation examinations. Students commented that watching slides, stamping out lettering and applying Letraset to transparencies was 'therapeutic'.

Planning for and teaching an event of choice

was a major course activity. It was hoped that other courses or clinical rotations would provide an opportunity for this teaching event but this was only possible in two cases: one person used a case presentation and another a behavioural science class presentation. As examinations were in the offing, others chose to present review classes to their peers. These proved very popular and were well attended. One quiet student, whose goal is a career in academic psychiatry, wished to teach on a one to one basis. She was dissuaded from her first idea of teaching electrolytes as it did not contribute to her ambition and persuaded to coach a student interviewing a simulated patient using videotaped feedback. Under these conditions her inherent teaching strengths were quickly revealed.

An immense amount of preparation went into these presentations as students struggled with content as well as the teaching skills to be demonstrated. Each presentation was videotaped and students rated their own performance before meeting with teachers. Students were found to be realistic self-evaluators, able to identify their strengths as well as their weaknesses and with clear ideas about how to develop and improve.

Student opinion of the course was high. On a 5-point scale from 'Unacceptable' to 'Excellent' all eight students rated the overall effectiveness of the course as excellent. Comments reflected appreciation of the syllabus, course organization, micro- and 'macro'-teaches and the non-threatening atmosphere. Suggestions for improvement consisted of fine-tuning the syllabus and inclusion of a session on giving feedback. Teachers found the course rewarding. They recognized that teaching such a small group was a luxury and that the students flourished under individual guidance. If a course in teaching was to be offered to the entire class of 120 students, different objectives would have to be set and other teaching methods used. For example, 'Demonstrate effective teaching behaviours' would be an impossible objective for 120 students with two teachers but 'Plan a course which incorporates a variety of teaching methods' would be feasible.

Although some medical teachers commented that this elective did not teach 'real' medicine, this view fails to recognize the fact that doctors assume the role of teacher in many capacities: with patients, with colleagues and with students at all levels. The effectiveness of doctors in this role can have a major impact on patient compliance and student learning. As teaching can be learnt in the same way as any other set of skills, this course provided a foundation for eight future teachers in medicine.

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