

MEDICAL EDUCATION AT DALHOUSIE

S. C. ROBINSON, M.D.*

Halifax, Nova Scotia

"The only fruitful learning is that done by the individual learner, in order to satisfy his needs and his goals."

"The only purpose to be served by teaching is to make individual learning more efficient, and more effective."

—George E. Miller

HISTORICAL NOTE: I hope the older alumni who read this article in the Faculty of Medicine Centennial Year will forgive the author for failing to outline in detail the history of education in this Medical School. From the earliest times, the scientific basis of medicine was recognized by placing the medical school in the university setting. In the days of small classes, the apprenticeship approach to education was not absent, and we hear graduates of the 1930's speaking of being Dr. So-and-So's clerk or intern for three or four months at a time. The emphasis was on service, rather than research, and the educational process must have been successful, as we are all aware of the distinguished mark Dalhousie graduates made in the medical community of this nation, and indeed, abroad. The impact of the Flexner report on the North American medical schools did not miss Dalhousie, and the donation of the Dalhousie Public Health Clinic by the Kellogg Foundation provided additional excellent learning facilities.

In 1954, a Faculty Committee on Medical Education submitted a report, suggesting a number of major revisions for the curriculum and teaching procedures at Dalhousie Medical School. Those recommendations concerning Departmental courses were, by and large, instituted, and have operated with success. The recommendations concerning inter-Departmental courses did not meet with the same degree of success, for a number of reasons. At the suggestion of the Dean, the

Faculty appointed a Special Committee on Medical Education in 1964, with the following terms of reference: To evaluate current programs of Medical Education; to select and define objectives of Medical Education; to develop and recommend changes in programs and methods of Medical Education at Dalhousie Medical School. This Committee, under the Chairmanship of Dr. W. T. Josenhans, reported to Faculty in November, 1966. This report was approved by Faculty, and forms the basis for subsequent studies and changes in the educational program at this School.

NEED FOR CHANGE IN MEDICAL EDUCATION: In his now well-known report, Dr. L. T. Coggeshall, Vice-President of the University of Chicago, states: "The enormous expansion of medical education, research, and service, especially in the past two decades, has resulted in greater changes than have occurred in any other period in medical history. The great and growing national concern over the health of our people requires that those responsible for medical education today, and of the future, turn their attention to a question of the greatest importance and far-reaching consequences. Will the methods and practices currently followed in providing health personnel of all categories be adequate to meet our national needs?"

A number of these basic changes were defined, and their importance assessed, by the Special Committee on Medical Education. These changes include at least the following items:

- (1) Scientific advances have had a growing influence on health care, and continue to be the most powerful force in changing medical practice.
- (2) The desires and needs of society have

*Associate Professor of Obs. & Gyne, Dalhousie University.

changed. Man today does not regard ill-health as an inevitable phenomenon of life, and expects the health team to provide good health.

(3) Health care is becoming more institutionalized. Medical treatment is moving rapidly out of the home, and even the office into the hospital, which alone can provide the facilities for today's scientific advances.

(4) There is an increasing degree of specialization. Although fifty per cent of Dalhousie's graduates enter the field of Family Practice, this itself is becoming a specialty which bears little resemblance to the General Practice of a few years ago.

(5) The development of the "team" approach to health care. The physician can no longer operate without the full co-operation of his colleagues on the health team. As the relative shortage of physicians increases, many of the physician's traditional duties are taken over completely by other members of the team.

(6) Increasing use of technological advances and equipment. The field of bio-engineering is making an increasing impact on the field of medical practice.

(7) Urbanization, and increased participation of organizations such as government, labour, and industry, in the life of the individual creates psycho-social problems which result in epidemiological changes. Changes in the pattern of disease in a population and in the reaction of people to diseases in modern conditions have created new problems.

PHILOSOPHY AND GOALS OF THE MEDICAL SCHOOL: The Faculty subscribes to Whitehead's statement that "education is the acquisition of the art of utilization of knowledge." Since the **Utilization** of acquired knowledge is central, the primary educational processes should be problem-solving, data analysis, critical thinking exercises, and independent study. Factual information will, of course, be required, but as the relevant facts change from year to year, the major emphasis must be on the intellectual activities involved in the manipulation of knowledge. The Faculty's aim should be to provide these types of experiences for the student, and to stimulate him to seize the opportunity to acquire the knowledge, skills,

and attitudes that have been defined as essential.

The process of education involves the definition of objectives, the designing of a curriculum to achieve the specified objectives, and an evaluation procedure to determine the degree of success in achieving the objectives.

The purpose of education is not to acquire knowledge, but to change behaviour. In other words, it is not the facts which one knows that matter, but what does matter is what one does with the facts. Obviously, the educated person must have a body of facts which he can manipulate in a useful way. This body of facts is regarded by the Faculty of Medicine as the "core knowledge" which the student must acquire. Without minimizing the importance of this, it is important to recognize that these facts must continually be reviewed in the light of changing knowledge and new circumstances. A teacher can help the student with this process while he is in the Medical School, but after leaving the School, the doctor must do this for himself. It is the Medical School's responsibility to ensure that a doctor can and will do this by himself.

After a great deal of thought, the Faculty has developed and accepted a clear statement of objectives for its educational program. You will note that these objectives are defined, not in terms of what the teacher does, but in terms of what the student learns.

STATEMENT OF OBJECTIVES: The student must accept the responsibility for his own education. He will need to know how to learn for himself, and must accept the importance of learning continued throughout life, in order to effectively discharge his responsibility to the community.

The student is to acquire a basic knowledge of medicine, and he must demonstrate his ability to use this knowledge to solve problems, including those to which he may not have had prior exposure. All students will be expected to go beyond this basic knowledge in some field of study, but all must achieve the minimum requirement.

The student should learn how the resources of the community may be utilized in the optimum health care of his patients. He should recognize that health care is the

responsibility of a team of individuals with whom he will work in providing patient care.

The student should acquire attitudes essential to his function as a physician. These include compassion and perceptiveness in the care of patients, understanding the fundamental rights of the patient, intellectual honesty, and the willing acceptance of responsibility for the initiation and continuing co-ordination of all efforts directed towards the patient's problems as they relate to his health.

FACULTY ORGANIZATION: Many people do not know how the Faculty of Medicine at Dalhousie makes decisions, or how it operates as a team. In academic matters, Faculty as a whole is responsible. Decisions on academic policy are made at meetings of the Faculty by majority vote. Faculty will generally receive the advice of special or standing committees, and of the Faculty Council, which is a small group of twelve members, elected from time to time, on a rotating basis, by free vote of the Faculty as a whole. In administrative matters, the Dean is the administrative officer of the Faculty, and is appointed by the President and Board of the University. In matters of administration, he is advised by Faculty Council. Departmental Chairmen in the Faculty of Medicine will, therefore, turn to the Dean in administrative matters, and to the Faculty for academic decisions.

This organization may appear cumbersome, but does provide an effective means of checks and balances, and leads to effective participation by all members of Faculty in decision-making.

STANDING COMMITTEE ON MEDICAL EDUCATION: Following the recommendation of the Special Committee, a Standing Committee on Medical Education was agreed to by Faculty in the spring of 1967. This Committee consists of a Chairman, and six members, who serve in rotation, and are elected by Faculty. The Standing Committee's responsibilities fall into the following categories: (1) in the light of the overall objectives of Faculty, to ensure that specific objectives are defined at all steps of the educational program. (2) to assist in ensuring that learning experiences are provided to meet

these specific and general objectives. (3) to assist with an evaluation program to measure the degree of success in achieving the objectives. (4) to stimulate and co-ordinate research in medical education.

The Committee on Medical Education regards these four items as its terms of reference, and believes that the four are interdependent. It regards its task as one of continuing study, measurement, and change. The Committee on Medical Education will make recommendations to Departments, and to the Faculty as a whole, but is not authorized to make final decisions.

SUBJECT SUBCOMMITTEES: Preliminary studies by both the Special Committee and the Standing Committee on Medical Education revealed that, to an astonishing degree, there was a lack of co-ordination and integration between the various departments in the Faculty of Medicine. Most other medical schools which have looked into their educational programs, have found the same problem to be present. At Western Reserve University, the Faculty was so alarmed by this problem that it abandoned teaching by departments, and instituted a program of teaching by subject subcommittees, which are interdisciplinary in personnel. For example, the Subcommittee on the Gastrointestinal System might well have representation from the Departments of Anatomy, Physiology, Biochemistry, Pharmacology, Medicine, Surgery, and Psychiatry. This Subcommittee would work out and share in providing the learning program in its subject area. This type of program, although successful at Western Reserve, requires a far greater number of teachers than Dalhousie can provide at the present time. Accordingly, it was decided to appoint a number of Subject Subcommittees, nineteen in all, who would be responsible for defining objectives, the educational program, and later, evaluation processes in their particular subject areas. These Subject Subcommittees would report, from time to time, to the Committee on Medical Education, and this Committee would be in a position to co-ordinate the reports and make recommendations to the Faculty concerning alterations in the educational program. Thus, it will be possible, through the study of inter-departmental Subject Subcommittees, to make re-

commendations which will develop integration and co-operation in the teaching program being provided by the various Departments.

OTHER LEARNING RESOURCES: Besides the educational program offered by the Departments, the Faculty has developed, and is improving, other learning resources. The most significant of these, is, of course, the Kellogg Health Sciences Library. The magnificent facilities of this library make it both convenient and comfortable to use the vastly expanded collection of published material. Not only is this growing collection available to Faculty and students, but it is also designed to be used by mail, by physicians practicing in the Atlantic area. It is hoped that habits of reference study which have been developed in the Medical School will continue, when the physician leaves the School and engages in practice.

With the development of new facilities in the Sir Charles Tupper Building, and in the teaching hospitals, a great deal of audio-visual equipment has become available. The Faculty has set up a special co-ordinating committee, to assist in developing to the full, these facilities. As most of this equipment is new to Faculty members, it will be necessary to provide instruction for Faculty in how best to use this resource.

As research in medical education continues, a number of other learning aids will undoubtedly be introduced. Various types of programmed learning devices show promise, and have already been instituted as additional resources by some Departments.

WHERE DO WE STAND TODAY? For almost a year, the Subject Subcommittees and the Committee on Medical Education have met to discuss and plan the educational program at Dalhousie. Over ninety members of Faculty have been actively involved in these meetings, and many of the groups have met on a weekly basis. One of the major accomplishments of all this work has been to define clearly "core knowledge" in the various subject areas. This means that when the student is advised what are the essential elements to be learned in a subject, this advice will be based on the best consensus of an interdepartmental group. It could also mean

that there has been a fresh updating of this required knowledge; what is unimportant has been eliminated, and that which is retained is relevant. The Committee on Medical Education is at the present time involved in a revision of the total program in medical education, as far as the M.D. level. The First Year portion of this program has already been accepted by Faculty, and will be implemented in the fall of 1968. Apart from integration and co-ordination, a major feature of the new program will be a sharp reduction in scheduled time. This is in keeping with the objectives of Faculty, to permit the student to engage in independent study, and to allow him to proceed far beyond the basic core of knowledge in some area in which he has particular interest. While independent learning may at first be more difficult, and seem frustrating to some students, it is the only kind of learning which the student can carry with him into practice, and use for the rest of his professional life. Obviously, in the long run, it is more important than any scheduled learning program.

The Committee on Medical Education believes that the maximum flexibility should be built into the new program. Not only should this apply to premedical education, but it should be possible for students coming to the Medical School to receive advanced standing in subjects in which they have had prior preparation. We believe that the new program will also make provision for the needs of students who learn quickly, those who learn slowly, and those who desire to pursue an elective program or research.

The whole question of the Clinical Clerkship has been studied in depth, and recommendations will be made, which should ensure that the clinical clerk has the best possible opportunity to learn, and that the service requirements of the institutions do not stand in his way.

The Committee on Medical Education believes that if the Clinical Clerkship is of sufficiently high quality, the internship can be varied to suit the individual requirements of the students, and that not all students need to participate in a general rotating type of internship.

EVALUATION PROCEDURES: There are many ways of measuring knowledge, but it is not so easy to measure skills, and even more difficult to measure attitudes. Obviously, all three are important in the competence of a student or physician. Research in this field is continuing, and with Faculty approval, the Committee on Medical Education is at present analysing the evaluation programs in each Department, and studying the actual examinations in detail. It is hoped that this will lead to a better recognition of the overall Faculty objectives by individual Departments.

FAMILY PRACTICE: The Faculty is aware that half of our graduates enter Family Practice, while half pursue other specialties, yet all our graduates have proceeded through the same curriculum, and those who enter Family Practice generally receive no further training, while those who engage in some other specialty have an additional four or five-year program. The Committee on Medical Education believes that doctors should be prepared for the kind of work in which they will engage, and that Family Practice is not an exception to this rule. At the present time, all students at the Fourth Year level have a one-week preceptorship with a family practitioner in the Halifax area. It is the view of the Committee on Medical Education that during the Clinical Clerkship, a much wider opportunity must be provided for the student to learn about Family Practice, and that if he elects Family Practice as his career choice, suitable additional training should be provided. Plans are being made at the present time for a program of this kind.

EDUCATIONAL FACILITIES: It is not the purpose of this paper to discuss in detail the magnificent facilities provided by the Sir Charles Tupper Building. Nevertheless, it should be pointed out that the students' study facilities in this building represent a unique and welcome departure for Dalhousie. For too long, our students have had to study in less than ideal quarters, and the new facilities, located as they are, near laboratories, classrooms, and library, will be a great help. Furthermore, the expanded facilities of all the teaching hospitals have been designed to provide additional facilities and areas for learning for the enlarged classes of ninety-six students.

MEDICAL STAFF: Since we believe that the purpose of teaching is to make individual

learning more efficient and more effective, it follows that a highly qualified staff of teachers in sufficient number is important to the educational process. The number of Faculty actually engaged in teaching has doubled in the past ten years, and the number of full-time teachers has more than trebled. This Medical School is fortunate in having a large number of dedicated part-time teachers, who are able and willing to participate substantially in the educational program.

RESEARCH: While all research workers are not necessarily good teachers, all good teachers are interested in the frontiers of knowledge and the advancement of their profession. Without this stimulus, the student is subjected to a dull experience. The research activities at this medical school have expanded beyond all recognition in the past decade, and this source of stimulation is available to the medical student. It is planned that many electives will become available in the research field for those students who are interested and able to pursue these activities.

THE MEDICAL SCHOOL AS AN ACADEMIC COMMUNITY: We believe it is highly significant that this medical school, in conjunction with all the others in Canada, is located within the University community. We believe that this community of scholars, both teachers and students, is vital for professional faculty. Furthermore, we believe it is important to recognize that more than half our entering students in the Faculty of Medicine have already attained Baccalaureate or Master's, and in a few cases, Doctorate degrees. The medical student is, then, in a graduate setting, and we believe this educational program should be at the graduate level. This conviction is reflected in the objectives of the Medical Faculty referred to above.

In the past, many students have complained that the educational methods in the Medical School have been at a more elementary level than those in their senior college years. This has been a disappointment and frustration to some students. On the other hand, there are other students who prefer to have their whole program scheduled, and resent the need for individual initiative in the learning process. At the other level, we find in all medical schools, certain Faculty members who are skilful and enthusiastic teachers, while there are others who are keenly interest-

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ed in practice or research, who give little more than token service to their teaching commitment. Obviously, an academic community contains many types of individuals at all levels. However, we believe that if the community is to function effectively, there must be a continual and easy dialogue between student and teacher, based on mutual respect, and an interest in the profession which all have chosen. We believe that if the concept of the academic community is perceived clearly, and the objectives of this school are well understood, the student-Faculty communication should be a perfectly natural, easy, straightforward process. We believe there is great improvement in this

regard.

THE FUTURE: I do not know what the future holds. I do not know what will be the exact nature of the educational program at Dalhousie in 1970, 1975, or in any future year. I do know that this Faculty has embarked on a process of constant study, evaluation, and revision, which is the best assurance of an up-to-date and exciting program. We cannot expect that changes will take place as rapidly as some students would like, but I think we can be sure that there will be constant change, and with the enthusiasm and dedication which I sense among both students and Faculty, I am sure that we will see a constantly improving program.



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