

MEDICAL EDUCATION

Issues in Planning and Implementation of Medical Education Programmes

Dr Aziz Chawhan*

Medical educators around the world are concerned with the training of physicians who are responsive to the community needs. Medical education is becoming increasingly expensive and less relevant to the task a graduating physician is expected to perform. Organizers of training programmes are faced with numerous dilemmas; some are financial and administrative; others are related to programme planning and implementation. This paper focuses on the issues related to programme planning and implementation.

Selection of Contents

The rapidly changing world and information explosion which is doubling almost every seven years are producing increasingly specialized academic groups. More departments and sub-departments, each desiring and on occasions fighting for time, to teach students very important topics in their areas of speciality. The members of all such groups are aware of the fact that they cannot possibly hope to teach students every detail any longer. As a result, each department now claims to teach only the principles and not the details. But even the load of principles is

now becoming so heavy that only an exceptional student might be able to cope with the learning demands.

To balance the large amount of information and the persuasion of pressure groups with special interests, one has to set some priorities in the selection of contents. The first important area to look at is the health needs of the community to be served by the graduating students for whom the programme is being designed. One criterion that may be applied to assess these needs is the disease frequency and disabilities produced by these diseases. Some high frequency disease might produce relatively little disability and vice versa. The availability of resources including facilities and finances should also be taken into account when setting priorities for educational programme needs. Selection of contents is a meaningless academic exercise in the absence of adequate resources¹⁻⁸, therefore it will not have any impact on the health services.

Another aspect that must be considered in determining the contents is the physician's performance. A systematic analysis of what is expected of

*Medical Education Division,
College of Medicine and Medical Sciences,
Arabian Gulf University,
State of Bahrain.

graduates should be carried out and priorities established^{6,8} rather than base such priorities upon the mere reflections of teachers.

Sequence of Courses

At present the sequence of courses is based upon conventions which dictate a certain order; anatomy precedes surgery, bio-statistics precedes epidemiology; principles precedes practice etc. This represents a traditional pattern of the faculty and is not the result of conclusive research data. These traditional patterns appear to the faculty to be a logical order of organization of knowledge. However, this may bear very little relationship to psychological sequence that is appropriate to the most efficient and effective learning. Sequence implies building in a fashion which is perceptible, thoughtful and planned. Each department and each teacher must build upon what has gone before in order to prepare students for what is to follow. But in reality, many teachers in medical schools have little idea about what the students had learnt before, or what they will learn afterwards. Thus education becomes a series of isolated episodes, each of which may be justifiable but has no clear reference that allows careful building and appears to be both irrational and inefficient. Competence required at each level should be the aim, and individual teachers and their specialities should contribute to achieve an acceptable level of this competence¹.

Instructional Methodology

The methods of instruction are selected by faculties in a reflex manner. The hours are arbitrarily assigned as X for lectures, Y for demonstration, Z for seminars etc, not because they are appropriate for goals, but because they are familiar and comfortable. The medical faculties employ the lecture as the dominant instructional method. The lectures serve very limited objective, usually that of just providing information which the teacher wants to teach. Yet, by looking at the problems of health services delivery, it becomes evident that all those problems exist not because physicians do not have the information but because they do not use the information already acquired. The educational programmes that simply aim at delivering information are unlikely to prepare the students to have an impact on the health services.

Rather than selecting a method because it is convenient, familiar and comfortable, the teacher, should aim for variety and diversity in the instructional methodology. Learning is an individual matter and students should have the opportunity to learn from a variety of methods and be able to select the methods that are most appropriate for the kind of learning they are engaged in. The students should be encouraged in the direction of independent study. The teacher should adopt methods where they have to teach less in order that the student may learn more^{1,3,4}.

Availability of Time

Unfortunately, time is the first criterion used to determine the educational programmes. Somewhere along the line, someone decided that four years training as in United States, five years as in United Kingdom etc. are required to complete the basic medical degree. In designing educational programmes time is the first dimension considered. The decisions regarding "time" are taken arbitrarily and made on strongly held opinions. There is very little evidence that the range of learning bears any perceptible correlation with the amount of teaching time. Determining the time needed for teaching is usually a reflection of the vigorous advocacy of strong departmental leaders rather than a reflection of the actual needs of learning. The curriculum committee meeting in medical schools usually represents a battle ground rather than scholarly discussions and the winner ends up with maximum number of hours devoted to teaching his or her subject. It is by no means a scientific approach to determine the time needed to achieve certain competencies. Time is usually an administrative convenience, and educational programmes should not be built on basis of convenience for teachers or administrators. Education should be based upon the sole purpose of helping students to learn using the most effective methods. Educational psychologists around the world unanimously agree on the principle that learning is an individual matter. To seek a magical curriculum where a selection of courses, hours and units of instruction will meet the needs of all students is a fruitless goal. A mechanism has to be devised that will allow all students to learn at their own pace and in the most effective way to achieve the expected level of competence. It is envisioned that some students will take a longer time while

others a short time to achieve the same competency. The time-fixed programmes cannot be supported either by logic or reason¹.

Assessment

There are more discussions about assessment methods in medical schools than any other topic except perhaps the topic of time. All these arguments and heated debates on whether to use multiple-choice or essay-type examinations; practical or oral examinations without first deciding what is to be assessed, is like a group of physicians debating passionately whether to use digitalis or penicillin without first agreeing that the problem they are trying to treat is a flat foot!

Debates over assessment method is useless until the competence level to be achieved has been determined, and then the rich variety of assessment methods can be employed. The technical considerations such as reliability and validity for selection of assessment methods must be emphasized. Testing, by use of invalid methods, communicates wrong objectives and learning needs to the students. Students will perform at the level of competence they are assessed and they will learn the areas they are going to be examined on. Thus the assessment will also influence the learning process and instruction. The examination is probably the most potent instructional device that a teacher has at his or her command.

Basically there are two purposes for assessment. The first, and perhaps the most important but the least used is the learning (formative) purpose. It provides students and faculty alike with some insight into the amount of learning that has occurred and the amount of learning that has yet to take place. The second purpose is that of certification that a required level of competence has been achieved. Another by-product of assessment that one must look for is the efficiency and effectiveness of the educational programmes. Medical faculties seldom look at the examinations analytically and critically to find out which instructional processes in the programme need modifications or which segment of

curriculum needs revision to improve the performance of the students. If students perform well in the examination, it is assumed the teachers are doing a good job; if the students perform badly in the examination, obviously, the assumption is that they are poor students^{4,9}.

Preparation of Teachers

Most members of the medical faculty have perhaps superb preparation in their discipline, but they have very little understanding and almost certainly no training in educational science. The professional task does not only require the faculty member to be well-informed in the subject matter but also to be capable of facilitating student learning by using the principles of educational science. In many parts of the world teaching is equated with lecturing or talking. Yet, if one looks at learning, one will find that one of the most difficult tasks a teacher has to learn is to keep quiet! He or she needs to learn more about bringing the spirit of inquiry instead of the spirit of knowing to the process of learning.

In summary, the issues of content, sequence, instruction, time, assessment and preparation of the faculty need to be resolved if the educational programmes of the future are to address the needs of an ever changing and rapidly developing society^{10,11}

Physicians of the future will have less emphasis on acquisition of knowledge but more skills in utilizing an increasing body of information through a process of inquiry and a scientific approach to the solution of the problems of health care delivery.

REFERENCES

1. Miller GE. Teaching and Learning in Medical Schools. Cambridge: Harvard University Press, 1962.
2. Miller GE. Medical education and the contemporary world. Proceedings of a symposium conducted by the University of Illinois College of Medicine. DHEW; 1977:172. DHEW publication no. 77-1232.

3. Miller GE, Fulop T, eds. Educational strategies for the for the health professions. Geneva, Switzerland: WHO; 1974. Public health, papers, no. 61.
4. WHO. Development of educational programmes for the health professions. Geneva, Switzerland: WHO; 1973. Public health papers, no. 52.
5. Barrows HS, Tamblyn RM. Problem-based learning: an approach to medical education. Springer Series on medical education, Vol. 1. New York, NY: Springer Publishing, 1980.
6. McGuire C. The curriculum for the Year 2000+. *Medical Education* 1989;23(3):221-7.
7. Bandaranayake RC. How to plan a medical curriculum. *Medical Teacher* 1985;7(1):7-13.
8. Dunn W, Hamilton DD, Harden RM. Techniques of identifying competencies needed by doctors. *Medical Teacher* 1985;7:15-25.
9. Gronlund NE. Constructing achievement tests. 2 ed. Englewood Cliffs, NJ: Prentice-Hall, Inc.; 1977.
10. Martenster D. Educational Development in an Established Medical School. Facilitating and impeling factors in change at the Karolinska Institute. *Medical Teacher* 1989; 2(1):24.
11. Jason H, Westberg J. Teachers and teaching in US medical schools. Norwalk, Connecticut: Appleton-Century-Crofts, 1982:72.