

CURRICULUM PLANNING.

Syed Razi Muhammad^{1}*

Planning of the curriculum depends upon the common sense, the understanding of the subject, the way the teacher was educated and the teaching practice of his peers. Help can be taken for guidance from curriculum of MBBS released by Pakistan Medical & Dental Council and revised in 2005¹.

New Insight: There are various models of curriculum development like Hanford & Hall's eight step process^{2,3} and Laidlaw & Harden's study guides⁴. However, Hardens ten questions⁵ do not only provide an excellent tool in planning a curriculum, but also in analyzing it.

Harden's 10- question approach:

1. What are the needs of the community in relation to the product of the Institution:

Although the principles of curriculum planning should be derived from internationally acceptable sources; the contents of the curriculum should be developed according to local situation. Need analysis in development of Medical Curriculum should include survey of the region finding out the commonest diseases prevalent and causing serious morbidity and mortality in the region.

The trend in developing countries is that the teachers look towards the west and take guidance from western books for the content of curriculum. Even local books and guides are mostly summary of books written in the west. One of the reasons for this attitude may be that many teachers have done their postgraduate training in UK or USA. Another cause may be the fact that more than 75% of the graduates of some of the more famous medical colleges (for example Aga Khan Medical College and other Medical Colleges of Karachi) leave the country. Some of them return after post graduation but most do not. Hence many teachers tend to teach the students diseases more prevalent in the west (e.g. crohn's disease, Varicose Veins, abdominal aortic aneurysms and peripheral vascular disease) and not so much those more prevalent in Pakistan (Viral hepatitis, tuberculosis, malaria typhoid etc). What is more, the disease pattern in Pakistan is who very variable. In Mirpurkhas, we have found typhoid perforation, tuberculosis of terminal ileum, liver abscess and hydatid cyst to be far more common than larger cites.

Out of eight approaches described by Dunn et al⁶, I think analysis of morbidity and mortality statistics fulfil the criterion of evidence based medicine. The regional statistic will clearly tell us which diseases are more important and need to be covered in greater details and vice versa (see abstract books of MMC seminars).

2. What are the aims and objectives:-

♦ *Professor, FRCS, FRCSED, Diploma in Medical Education- Dundee .*

**=corresponding author: Syef Razi Muhammad
E-mail: razimuhammad@yahoo.com*

The PMDC's book describes that curriculum should aim at application of knowledge and problem solving rather than only recall of factual knowledge and to define the psychomotor skills that the students should be able to perform themselves and differentiate them from those that should be observed. The overall curriculum document should emphasise on areas that the student must know, incorporate new fields of knowledge, and yet ensure that the student is not overburdened and hence eliminate details of uncommon conditions.

I would like to add following points in AIMS:

To produce doctors who can meet the need of the community while being able to continue their education inside and outside the country and to have understanding of evidence based medicine and medical research.

I would like to alter the objectives in Surgery as follows.

By the time of completion of the curriculum the student will be expected to be able to:

- i. Demonstrate the ability to conduct a focused medical history and targeted physical examination pertinent to a surgical condition.
- ii. Construct a meaningful differential diagnosis of common symptoms & signs following initial work-up.
- iii. Learn the principles, indications and interpretation of common diagnostic tests performed in surgical patients.
- iv. Know the indications for surgical intervention in common surgical problems.
- v. Be aware of the possible procedural options for commonly seen conditions.
- vi. Understand ethical, cultural, and public health issues in Surgery.
- vii. Discuss the major classes of drugs used in Surgery and demonstrate the knowledge required for their use.
- viii. Demonstrate facility in applying informatics to critical appraisal of the surgical literature, and to making surgical diagnostic and therapeutic management decisions.
- ix. Be familiar with the principles and practice of pre-operative and postoperative management of patient.
- x. Demonstrate proficiency in scrubbing and maintain-

ing sterile technique, dressing clean and contaminated wounds, wound closure with sutures/ staples, drain management, wound debridement, and operative assistance.

- xi. Be familiar with the choice of anesthetic agents, their administration, and recovery from their usage.
- xii. Learn to perform common procedures in ward, OPD and Accident & Emergency department.
- xiii. Recognize an acute surgical abdomen, assign its probable cause, be able to perform its basic management and know the operative procedures required.
- xiv. Effectively and respectfully communicate with colleagues, staff, and patients/ families.

3. What contents should be included

Curriculum of MBBS released by Pakistan Medical & Dental Council and revised in 2005¹ is quite good for undergraduate surgical curriculum. However, I would like to add following four headings.

a) **Clinical Competence:** Include knowledge (and application of), skills and attitudes. This varies according to subject taught

b.) **Generic Competence:** e.g. team working, time management, organization of surgical ward, operation theatre, ICU and A&E department, CVs, IT skills & searches, stress management, informed consent & other ethical issues.

c.) **Commitment to lifelong learning:** e.g. keeping a portfolio, learning in small groups, developing a personal development plan, learning to seek best evidence information, presenting information and handouts to peers.

d) **Core Professional Values:** e.g. ability to deal with uncertainty.

4. How should the contents be organized:

In present situation, basic subjects are taught first i.e. Anatomy, Physiology and Biochemistry in first two years. Pharmacology, Forensics Medicine and General Pathology (including Microbiology) in 3rd year. Special Pathology, Community Health Sciences, ENT and Eye in 4th year. Medicine, Surgery, Gynaecology & Obstetrics and Paediatrics are taught from 3rd to 5th year with periodic end of clerkship tests but examined by University at the end of 5th year.

It appears important to use three terms at MMC to ensure that course organization where the core curriculum is completed in first two terms. During third term, class may be divided into two or more. Slow learner should get an opportunity to consolidate the core topics whereas those who have already mastered the core should be allowed to sit in classes where options are learned. In basic medical sciences, application of learning of core can be applied using clinical vignettes. Practical classes/ clinics can also be divided in similar manner.

5. What educational strategies should be adopted?

Harden identified the SPICES model for curriculum planning⁷. Our curriculum fell mostly on the right side.

a) Student Centered - Teachers Centered.

The course, its organization and pattern of assessment should be discussed with students. Their questions should be answered and good suggestions incorporated. Surface learning as opposed to deep learning should be promoted. The thinking process should be encouraged and the assessment should reward those who actively participate in learning and apply facts rather than those who can simply recall and reproduce the answers.

b) Problem- Based learning - information gathering

More efforts should be made to encourage problem based learning instead of lectures.

c) Integrated teaching- Discipline based teaching

Dissociation between basic and clinical subjects remains one of the weakest points of current curriculum.

At least horizontal integration should be encouraged. For example, the anatomy, physiology and biochemistry department should liaise and include topics from same system in each semester. Similar integration should be developed in Medicine, Surgery and Special Pathology for 4th year.

d) Community Based education - Hospital Based education

The current curriculum is heavily biased towards hospital based education. Hence most emphasis is put on availability of hospital based education only. Over 70% of population of Pakistan lives in rural areas. Yet over 90% of medical colleges in Pakistan are situated in large cities with virtually no exposure to rural population.

e) Electives - Standard programme

As the student is heavily loaded with subjects, the examinations and the prescribed teaching are so heavy that student cannot even think about Electives. Again, introduction of core curriculum and electives can change this situation though teachers will have to spend lot of time in planning and implementing the courses.

f) Systematic - Apprenticeship or opportunistic program

Unfortunately the learning at present is patchy and piecemeal. The approaches of outcome based education and curriculum mapping have not been introduced. Proper rationalization of competencies (log book) and time must be done. However this is one aspect where the curriculum followed has flexibility to be adequately adjusted and moved to the left. Although at present what is taught actually depends upon what is available and on the interest of the staff concerned. Hence, it is still an opportunistic program where a lot is left on chance.

Where we stand at SPICES model:

Now let me identify the course on each of 6 spectra as it stands at present.

Student centered _____	?_ Teacher centered
Problem based _____	?_ Information gathering
Integrated _____	?_ Discipline
Community _____	?_ Hospital
Elective _____	?_ Uniform
Systematic _____	?_ Apprentice

6. What teaching methods should be used?

a) Students Grouping:

Although at present most emphasis is on lectures, we should follow all three types of group teaching. All subjects have **designated lectures** which cover the whole course outline. These are directed to the whole class and are delivered by the senior most teachers of the department.

The class should be divided into small groups of 10-12 students. For example, in first and second year, each class can have a lecture and other small group learning. One class may be divided into three groups of 33 each. Each group going in anatomy, physiology and biochemistry tutorials. Each subject requires three designated teachers. Those in anatomy can go to histology, dissection and discussion parts under a designated teacher. Other subjects can have similar arrangements. In clinical classes small groups already spend time under a supervisor in the wards where he/ she involves them in tutorials. Students have opportunities to do self learning in libraries, hostels and homes.

b) Teaching Tools:

Most teachers are fully aware of teaching tools. Slide projectors, overhead projectors, multimedia projectors, computers, audio tapes videotapes, simulations and models are freely available and should be used. The college has two multi-head microscopes which should be utilised in teaching histology, histopathology and microbiology.

7. How should assessment be carried out?

Besides annual examination, there are three end of term examinations. First is during April, second immediately after summer vacations and Third during October/ November.

It is important to have a transparent record of attendance, performance of students during the whole term (preferably with a portfolio) and results of each term examination and to use it in granting 10% of internal assessment marks in annual and biannual examinations.

The first two terms should include the core curriculum. The compulsory essay question and two third of SBAs, short questions & rest of theory and viva should be from the core topics. Less able student will try to master the core (revision) during third term and their third term examination will be only from core topics. Hence any student who has learned the core properly should score over 50% marks comfortably and pass. The students who failed in annual and passed on biannual examination will have a reasonable chance of passing and joining the main stream next year (hence defying the dictum "once a loser, always a loser"). Better students will learn non core topics and hence will have chance to score better marks, take distinctions and positions by doing well in non core topics too. Those students who pass two term examinations should be able to pass the annual examinations.

All departments should use the same pattern in term and

annual examinations. Vignette based SBA and EMI are good to assess application of knowledge. OSCE & OSPE examinations are good in assessing skills and competence.

8. How should the details of curriculum be communicated

Besides using PMDC booklet, all departments should include their staff, some teachers from other departments and preferably students in forming Core Curriculum and options. A curriculum committee of Muhammad Medical College should be formed and hold meeting with teachers for proper communication of course.

9. What educational environment or climate should be fostered:

The course should aims to create a climate of safety and encouragement to learn and update on knowledge and skills. The small group format of the course, with strong emphasis on group formation and process, should actively pays attention to Mulligan's three areas of concern for participants: inclusion, contribution and caring⁸. The tutors should be attuned to group process, and actively facilitate the group, ensuring all participants are included, have opportunities to contribute, and are cared for within the group and during mentoring sessions. Tutors should share their own values and beliefs within the group, and sign up to a core belief of valuing individuals and their abilities, and fostering that.

It is interesting to observe the three phases of group process outlined by Heron (hierarchy, cooperation and autonomy) developing in the group as the year progresses⁹.

10. How should process be managed:

The curriculum committee should find ways to make the curriculum more suitable to local conditions. The dean should liaise with departments for formation of curriculum committee which undertakes planning, implementation and monitoring of the curriculum. Each department should be represented in the curriculum committee. The committee should hold meeting with each department to discuss, alter, communicate and finalise the curriculum of their subjects. Although at present, students have no representation in the curriculum committee, I hope they are included in future.

Conclusion:

I have tried to analyze the undergraduate surgical curriculum taught at Muhammad Medical College Mirpurkhas, on the basis of Harden's 10 questions. I have also included critical appraisal of the present situation and made suggestions wherever I found necessary. As curriculum planning is an active and continuous process, this pattern of analysis will continue to find weak spots in curriculum and suggest way to improve it.

References:

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