A Retrospective Look at The Medical Curriculum

Pages with reference to book, From 85 To 92

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The Baconian concept that knowledge makes perfect and more knowledge makes more perfect is no longer feasible. The quantity and rate with which new information is being added is phenomenal. Moreover, the whole field is in a state of flux. Concepts are being discarded to be replaced by new ones and facts are piling up. The "Learner's load has become impossible." Educationists including those involved in Medical Education are confronted with the problem of picking out from the vast sea of knowledge those bits which are essential for a given profession. For physicians this means, those areas of knowledge, skill and attitudes which are essential for satisfactoraly practicing medicine in a given community.

A relevant, balanced curriculum of a medical college is, thus, designed to meet the aspirations and needs of the local community which its graduates are to serve. Since medical science and the needs of the country both are subject to change with time, the designing of a curriculum should have an in-built mechanism for changing with the needs. A curriculum taken from elsewhere, no matter how prestigious the institution or institutions be, is not likely to fulfill the local needs. Each country has to develop a curriculum that will meet its own requirements.

The design of such a relevant, balanced curriculum obviously needs data from different sources including the community and the technical experts. As a step towards collecting some information which could be used for the analysis of the present curriculum this study was undertaken with the assistance of the Pakistan Medical Research Council.

Material and Methods

A questionnaire soliciting opinion on the relevance of the courses, methods of teaching employed and curriculum time was prepared. On a five point rating scale the respondents were asked to retrospectivly rate the undergraduate courses they had taken, keeping in mind the needs of the work they were now doing. The self administered questionnaire also included information on the year of graduation and the nature of the present job, but the respondents were not asked to identify themselves unless they so desired. The questionnaire also collected information on additional parameters which are not being reported here.

The study was conducted in two phases. In phase 1 the study was conducted in Karachi (1979-1980). Phase 2 was done in Hyderabad in 1981-1982.

In phase 1 The questionnaire was distributed amongst the staff of Dow Medical College Karachi, Sind Medical College, Karachi and Jinnah Postgraduate Medical Centre, Karachi. It was also distributed to the clinical staff in some of the non-teaching hospitals of Karachi and some Family Physicians. In phase 2 it was distributed amongst the staff of Liaquat Medical College staff 'of other Hospitals in Hyderabad and Family Physicians in Hyderabad and surrounding towns.

	Karachi sample	Hyderabad sample
Basic Science Departments	42	71
Clinical Departments of Medical Colleges	157	386
Non-teaching Hospital	80	144
Family Physicians	59	95
Administrators	32	11

	Relevance	Method of teaching	Curriculum
5.	Indispensable	Extremely Useful	Very Insufficient
3.	Highly Relevant	Very useful	Insufficient
2.	Relevant	Useful	Sufficient
1.	Some relevance	Somewhat useful	Long
0.	No relevance	Totally useless	Very long

In Karachi about 1000 questionnaires were distributed of which 370 were returned after completion. In Hyderabad 683 questionnaires were returned. The completed questionnaires were first separated according to the present job of the respondent into those working in (A) Basic Science Departments of

Medical Colleges, (B) Clinical Departments of hospitals attached to medical colleges, (C) Non teaching Hospitals; (D)Administrators and (E) Family Physieians. The questionnaires for each of the five categories were analysed separately.

The number of respondents in each of the job categories in the Karachi and Hyderabad samples were as follows.

As a first step the number of responders choosing each of the five point rating scale responses was' tabulated. The number of responses was then multiplied by a weightage factor which was as follows. For example if a respondent considered Anatomy indespensable his score for Relevance of Anatomy was 5, If he considered practicals in Anatomy as somewhat useful and the curriculum time ' sufficient' his score was taken as 1 for practicals and 2 for curriculum time.

The sum totals of the figures for relevance, different methods of teaching and curriculum time for each subject were taken and divided by the number of responders in that particular Job category. This gave a mean score for each subject according to each job category.

A mean score of 1.99 or less in the table for relevance of the subject indicates that the responders of the particular job category considered that subject of low relevance. Similarly a mean score of 1.99 or less in teaching methods indicates that the particular method used was not useful For curriculum time a mean score of 1.99 meant that the time allotted for that subject was considered more than needed.

Results

The mean scores for different subjects given by respondents of different job categories in both the Karachi and Hyderabad samples show great similarity (Tables 1 and II)

Table I

Showing Mean Scores by Different Categories of Responders Karachi.

JOB CATEGORY	RELEVANCE					CURRICULUM TIME				
	1	2	3	4	5	1	2	3	4	5
Subjects										
Descriptive Anatomy.	3.0	3.4	3.0	2.7	2.7	1.4	1.4	1.5	1.3	1.3
Histology	2.9	2.1	1.6	1.5	1.2	2.0	1.6	1.7	1.6	1.5
Embryology.	2.2	1.9	1.4	1.4	1.1	2.2	1.7	1.7	2.0	1.6
Physiology.	3.2	3.4	3.1	3.1	3.0	1.7	1.8	1.8	1.7	1.7
Biochemistry.	2.4	2.5	2.2	2.3	2.1	2.1	2.0	1.9	1.9	1.9
Pharmacology.	2.3	3.2	3.2	3.8	3.6	1.8	1.9	1.9	1.8	1.8
Therapeutics.	2.4	3.5	3.7	4.0	3.9	2.1	2.2	2.2	1.9	2.0
General Pathology.	3.0	3.3	2.8	3.1	3.1	1.9	1.8	1.9	1.9	2.0
Special Pathology.	2.4	3.3	2.9	2.7	3.1	1.9	2.0	2.2	2.1	2.0
Clinical Pathology	2.5	3.3	3.2	3.0	3.1	2.3	2.5	2.2	2.1	2.1
Parasitology.	2.2	1.9	2.1	2.6	2.3	1.8	2.0	2.0	1.9	1.8
Microbiology.	2.3	2.0	1.8	2.0	2.0	1.9	1.9	2.0	1.9	1.7
Forensic Medicine.	1.1	1.2	1.0	1.6	1.9	1.7	1.6	1.6	1.9	1.4
Community Medicine	1.6	1.4	1.7	3.0	2.2	1.6	1.2	1.8	2.2	1.3
Clinical Surgery.	2.2	3.6	3.0	2.6	3.1	1.9	2.1	2.0	2.1	2.1
Operative Surgery.	2.2	3.3	2.7	2.2	1.9	1.9	2.4	2.2	2.2	2.2
Medicine.	3.6	4.0	3.6	4.2	4.5	1.8	1.9	1.9	1.9	2.2
Obstetrics.	1.9	2.3	2.1	2.4	2.4	1.9	1.8	1.9	1.8	1.8
Gynaecology.	1.8	2.3	2.1	2.5	2.5	1.9	1.8	1.9	1.8	1.8
E.N.T.	1.8	1.9	1.7	2.8	2.7	1.9	2.0	2.1	2.0	2.2
EYE.	2.0	1.7	1.7	2.7	2.6	2.0	2.3	2.1	2.0	2.3

Job Category	Total
1. = Basic Science Departments	42
2. = Clinical Departments of Teaching Hospital	157
3. = Non-Teaching Hospitals	80
4. = Family Physicians	59
5. = Administrators	32

LECTURES AS A METHOD OF LEARNING					PRACTICALS AS A METHOD OF LEARNING					DEMONSTRATION/WARD ROUNDS AS METHOD OF LEARNING				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
2.5	2.5	2.7	2.5	2.7	3.6	3.8	3.9	4.1	4.1	3.5	3.7	3.6	3.9	4.0
2.0	1.6	1.7	1.6	1.6	3.2	3.0	2.5	2.3	2.3	2.9	3.7	2.3	2.4	3.4
2.0	2.1	1.7	2.0	1.8	1.2	1.9	1.6	1.5	1.5	2.2	2.4	1.9	2.1	2.1
3.2	3.1	3.0	3.1	3.4	2.9	2.6	2.7	2.6	3.3	2.6	2.6	2.5	2.8	3.2
2.6	2.6	2.3	2.5	2.3	2.6	2.6	2.3	2.4	2.3	2.2	2.4	2.1	2.1	2.2
2.7	2.7	2.3	3.4	3.5	2.2	2.0	2.3	3.0	2.6	2.1	1.9	2.1	2.8	2.7
2.9	2.9	3.0	3.4	3.7	2.2	2.1	2.4	3.2	2.6	1.5	1.9	2.1	3.0	2.7
3.3	3.0	3.2	2.9	3.1	3.4	3.0	2.8	2.9	2.9	2.6	2.7	2.6	2.9	2.8
3.0	2.9	2.9	3.0	3.2	3.3	3.0	2.8	3.0	2.9	2.8	2.7	2.5	2.9	2.8
3.1	2.7	2.9	3.1	3.2	3.1	2.8	2.9	3.1	3.0	2.6	2.5	2.7	2.9	3.0
2.7	1.7	2.2	2.6	2.4	2.9	1.8	2.1	2.7	2.1	2.6	1.7	2.0	2.6	2.2
2.8	1.7	1.9	2.2	2.0	2.9	1.8	2.1	2.6	1.9	2.4	1.7	1.9	2.3	2.0
1.7	1.4	1.5	1.9	1.9	1.6	1.3	1.5	1.5	1.6	1.8	1.3	1.5	1.9	1.6
2.1	1.5	1.7	2.6	2.0	1.6	1.3	1.7	2.3	1.9	2.0	1.4	1.5	2.4	1.9
					WARD DUTIES									
3.0	2.7	3.2	3.8	3.6	4.1	3.8	4.0	4.1	4.0	4.2	3.9	4.1	4.2	4.3
3.1	2.8	3.1	3.3	3.6	3.6	3.2	3.5	3.7	3.3	3.8	3.1	3.5	3.7	3.5
2.6	2.2	2.4	2.5	2.5	4.1	3.8	4.2	4.2	4.2	4.2	3.8	4.4	4.3	4.6
2.7	2.3	2.3	2.8	2.9	3.9	3.1	3.1	3.1	3.1	3.8	2.7	2.7	3.1	3.2
2.9	2.3	2.4	2.9	2.8	3.9	3.1	2.4	3.0	3.0	3.9	2.7	2.7	2.9	3.2
2.8	2.1	2.2	3.0	2.9	3.4	1.8	2.2	2.9	3.0	3.5	2.1	2.4	3.0	2.9
2.9	2.2	2.2	3.1	2.9	3.6	1.3	2.1	2.9	2.6	3.7	1.5	2.3	3.1	2.9

Table II

Showing Mean Scores by Different Categories of Responders. Hyderabad Sample.

JOB CATEGORY	RELEVANCE					CURRICULUM TIME				
	1	2	3	4	5	1	2	3	4	5
Subjects										
Descriptive Anatomy.	3.1	3.0	3.01	2.7	2.90	2.8	2.2	2.2	2.4	2.1
Histology	2.5	1.6	1.5	1.7	1.6	2.1	1.8	2.3	2.1	2.4
Embryology.	1.9	1.9	1.3	1.5	1.2	1.9	2.0	2.2	2.0	2.5
Physiology.	2.8	3.5	2.9	3.0	2.8	2.4	2.1	2.2	2.1	2.2
Biochemistry.	2.7	2.5	2.5	2.7	2.1	1.8	2.0	2.0	2.0	2.1
Pharmacology.	3.0	3.6	2.9	3.3	3.4	2.3	1.9	2.0	2.0	2.1
Therapeutics.	2.8	3.6	3.3	3.6	3.9	1.9	2.0	1.8	2.0	1.9
General Pathology.	2.8	2.9	2.7	2.8	2.3	2.4	2.0	2.0	2.1	2.2
Special Pathology.	2.8	2.8	2.7	2.7	2.6	1.6	1.8	1.9	1.9	1.9
Clinical Pathology	2.8	2.8	2.9	2.9	2.5	2.1	2.3	1.9	2.0	2.0
Parasitology.	2.2	2.2	2.6	1.9	1.5	2.1	2.1	1.9	2.0	1.9
Microbiology.	2.4	2.1	1.8	1.7	1.1	1.9	1.8	1.8	1.6	1.6
Forensic Medicine.	1.7	1.6	1.9	1.9	2.1	2.4	2.3	2.4	2.6	2.5
Community Medicine	2.1	2.0	2.0	2.0	3.9	2.3	2.2	2.5	2.3	2.5
Clinical Surgery.	2.5	3.2	2.9	2.9	2.7	2.0	2.0	2.0	1.9	
Operative Surgery.	2.4	3.1	2.6	2.2	1.8	2.0	2.2	1.8	1.9	
Medicine.	2.7	3.7	3.7	3.8	3.5	2.1	2.2	1.9	2.0	
Obstetrics.	2.0	2.5	2.4	2.2	2.0	1.0	2.0	2.0	1.8	2.1
Gynaecology.	2.1	2.5	2.1	2.1	1.8	1.9	1.9	1.9	1.7	2.0
E.N.T.	1.9	2.1	2.5	2.4	2.8	2.1	2.6	1.7	1.9	2.1
EYE.	2.0	2.0	2.5	2.3	2.6	2.0	2.4	1.2	1.9	2.1

Job Category	Total
1. = Basic Science Departments	71
2. = Clinical Departments of Teaching Hospital	386
3. = Non-Teaching Hospitals	114
4. = Family Physicians	95
5. = Administrators	11

LECTURES AS A METHOD OF LEARNING					PRACTICALS AS A METHOD OF LEARNING					DEMONSTRATION/WARD ROUNDS AS METHOD OF LEARNING				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
2.8	1.6	2.6	2.3	2.9	3.6	3.2	3.4	3.1	3.6	3.3	3.0	3.2	2.9	3.2
2.8	2.7	2.4	2.3	2.4	2.9	3.0	2.4	2.3	2.5	2.7	2.7	2.5	2.4	2.5
2.4	2.7	1.8	1.8	1.8	1.9	1.3	1.5	1.4	1.5	2.4	2.4	2.0	2.0	1.9
2.8	3.0	3.2	3.1	2.9	2.5	2.3	2.5	2.4	3.2	2.4	2.6	2.7	3.7	3.4
2.5	2.6	2.6	2.5	2.7	2.3	2.4	2.7	2.7	2.6	2.2	2.4	2.6	2.6	2.5
3.2	3.0	3.2	3.0	2.9	2.3	2.2	1.8	2.6	2.2	2.2	2.1.	2.2	2.5	2.5
3.1	3.0	3.0	3.4	3.4	2.3	2.4	2.3	2.5	2.9	1.8	2.1	2.1	2.5	2.8
2.8	3.1	2.7	2.8	3.0	2.6	2.8	2.3	2.5	2.5	2.5	2.7	2.3	2.6	2.5
2.9	2.8	3.1	2.9	2.8	2.7	2.8	2.5	2.3	2.6	2.3	2.7	1,7	1,8	2,5
2.7	2.9	2.8	2.9	2.5	2.6	2.8	2.9	2.9	2.3	2.4	2.9	2.5	2.6	2.2
2.3	1.9	1.9	2.3	2.3	2.2	2.2	2.1	2.3	2.5	2.1	2.2	2.0	2.3	2.4
2.2	1.7	2.2	2.0	1.9	2.2	2.3	2.1	2.2	1.8	2.1	1.7	2.4	2.2	1.8
1.7	1.7	2.1	1.9	1.9	1.6	1.6	1.8	1.8	1.6	1.6	1.6	1.9	1.7	2.7
1.7	1.7	2.4	2.1	2.9	1.9	1.6	1.8	2.0	2.5	1.9	1.6	1.8	2.0	2.7
					WARD DUTIES									
3.0	3.1	2.8	3.7	3.9	3.0	3.6	3.4	3.1	3.7	3.0	3.7	3.4	3.9	4.1
2.5	2.9	3.4	3.1	3.4	2.7	3.2	2.9	2.6	2.6	2.7	3.3	3.3	3.1	3.3
2.3	2.4	2.6	2.2	2.1	3.2	4.0	3.8	3.5	3.9	2.4	2.9	2.8	2.5	2.4
2.2	2.5	2.3	2.4	2.6	2.6	2.9	2.4	2.0	2.6	2.1	2.6	2.9	2.2	2.4
2.3	2.5	2.4	2.6	1.6	2.5	2.8	2.4	2.3	2.5	2.3	2.6	2.4	2.2	2.4
2.0	2.3	2.4	2.4	2.6	2.2	2.3	2.1	2.3	2.5	2.0	2.3	2.2	2.2	2.7
2.0	2.0	2.1	2.5	2.5	2.3	2.2	2.0	2.2	2.6	1.9	2.4	2.0	2.2	2.5

Relevance

Medicine, Therapeutics, Pharmacology, Clinical Pathology and Physiology were given high rating by respondents of all the five job categories in both the Karachi and Hyderabad Samples. Similarly nearly all the respondents gave low ratings to histology, Embryology, Community Medicine and Forensic

Medicine. The later subject got the lowest rating of all being less than 2 - by all groups except Administrators in the Hyderabad sample whose mean score was 2.1.

Curriculum

The time allocated for all the subjects was considered sufficient or even long by respondents of the different categories in both the samples. In most cases the mean score was 2.0 or less than 2. A mean score of 3 (Insufficient) was not given to any subject by any group of respondents.

Teaching Methods

Lectures

Lectures were considered useful for most of the subjects except Community Medicine and Forensic Medicine.

Practicals/ Ward duties

In the Karachi sample practicals in basic science subjects were generally given a higher rating than lectures except in cases of Physiology, Pharmacology and Therapeutics. The difference was particularly marked in case of Descriptive Anatomy and Histology. For clinical subjects ward duties were given a higher rating than lectures except in the case of ENT and Eye.

In the Hyderabad sample too, the practicals were considered better than lectures for Anatomy and Histology. For Pharmacology and Therapeutics the lectures were considered more useful. For other basic subjects the differences were not much.

Demonstrations/Ward rounds

Demonstrations in Basic Science subjects generally got lower ratings than practicals and even lectures except for Embryology where they were considered the best method of teaching. For Pharmacology and Therapeutics the demonstrations got a much lower rating than lectures.

Ward rounds in Medicine and Clinical Surgery were given a high rating. For other clinical subjects they were considered useful and got almost the same ratings as Ward duties.

Discussion

This study looks at only one of the many facets of the curriculum of the medical colleges in Pakistan. There is a need for studying this from other angles as well. The study brings out the need for rethinking and reallocation of the priorities and the old established routines.

Perhaps the most important finding of this study is that the time being spent on teaching of various subjects is too much. For no subject was it considered insufficient and for even some of the prestigious clinical subjects like Medicine, Surgery and Obstetrics & Gynecology it was considered too long by some groups. This is worth taking note of considering that presently most of the medical colleges in the country are struggling through their courses in six or seven years instead of five. This study indicates that according to most of the graduates even five years could be reduced by judicious prunning of some of the allocated teaching hours.

The study also provides food for thought for teachers of Forensic Medicine and Community Medicine? why do graduates feel they have so little relevance for them? Could it be that a redesigning of the course and more innovative instructional methods are needed ? It certainly can not be said that PMDC or the University has not given due importance and support to these subjects. There is a need to critically reappraise the curriculum and instructional strategy of these two subjects otherwise there will be little justification to retain subjects of such low percieved relevance in a heavily overburdened curriculum.

The study has also provided some indications of how effective are the instructional methods for different subjects. Thus, lectures for Descriptive Anatomy and Histology should be replaced by greater emphasis on Practicals. -Embryology is best taught by demonstrations. For clinical subjects the prefered method of teaching comes out to be Ward duties and rounds. Why waste so much curriculum

time on lectures.

Acknowledgement

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Reference

1. Pakistan Medical Research Council. “Pilot study for Generation of Baseline Data on Medical Education”; Monograph No. 4, 1980,