

LEAD ARTICLE

Proposed changes to M.C.I. 1997 Guidelines on Graduate Medical Education –

A Step towards progress or disaster? **(Dr. N. Ananthakrishnan)**

Even before the ink on the 1997 MCI regulations on Graduate Medical Education has dried and while only three batches have graduated under those regulations, it is understood that yet another set of guidelines are in the process of formulation. This is not merely an attempt to rectify problems with the 1997 guidelines detected after implementation, but a complete rethink on nearly the whole issue. Unfortunately the process of consultation and publicizing of the proposed new regulation is not as wide as was done previously and hence a vast majority of medical college teachers and more importantly medical students are unaware of the changes being discussed. Some of the 1997 regulations have already been changed by gazetted notifications; again without sufficient dissemination of information.

It is attempted to review here the new guidelines under discussion for a wide discussion of the proposed changes leading to a feedback to the M.C.I. before the changes are gazetted. For want of an official name, the new proposals under discussion are called MCI 2003 guidelines although they are still not official.

PHASE DISTRIBUTION:

a) The essential differences in phase distribution between MCI 1977 and MCI 2003 is shown in Chart I. The six monthly semester system is sought to be replaced by 5 monthly terms for unknown reasons. Currently the university examination is held at 6 monthly fixed intervals for students of the whole course. With the new five monthly term, assuming that admissions are made in July / August of a year (say 2004) the first professional would be held next October, 2005, after 15 months, the second professional in January 2007, 15 months later, the third professional in April 2008, after another 15 months and the final examination in July 2009 after the last 15 months. This is for the regular batch. For the supplementary examinations there would be a new set of dates. ***In actual practice, examinations would be held throughout the year in any college or university. None of the professional examination would coincide.***

b) Over all the total period is sought to be kept constant at 5½ years but at the cost of reducing internship to 6 months to accommodate the increase in course duration from 54 months to 60 months.

c) While the duration of the preclinical subjects is kept constant at 12 months, a welcome change in an

additional 3 months period at the beginning of the course to be devoted to teaching of English as a language, orientation to use of computers, medical ethics and history of medicine. This 3 months period will greatly smoothen the transition from the +2 student to the rigors of medical education.

d) The para-clinical phase has been reduced from 18 months to 15 months and the clinical phase increased from 42 months; (7 semesters) to 45 months (9 terms). The rationale for such proposed changes within 6 years of the 1997 regulations has not been explained.

HOSPITAL POSTINGS:

a) The M.C.I. 1997 hospital posting schedule and the proposed new schedule are shown in chart 2. The change is shown in last column. Duration of posting in medicine, community medicine and dermatology has been reduced and duration of postings in pediatrics, ENT, psychiatry, radiology and EMS has been increased.

b) The previous guidelines stressed the importance of shifting undergraduate teaching to the OPD, the emergency department and the community including peripheral health care institutions. This welcome concept has been reiterated in the current proposals. In the light of the above, it is difficult to justify a decrease of 4 weeks from community medicine. Also dermatology has now become an examination subject. Yet the time spent in dermatology is reduced by 2 weeks.

c) The importance of ENT is diminished since it is sought to be combined with ophthalmology in a single examination. Yet the duration of postings in ENT has been increased.

d) There are some obvious errors in the posting schedule. Two examples: Six months of posting is shown in the Phase III and Part II period of training for pediatrics when the examination for pediatrics is already over in Phase III part I

TEACHING HOURS: (CHART 3)

In spite of the course duration not being increased in phase I, the number of teaching hours has been greatly enhanced. It is not clear how this extra time is to be found. The teaching hours for all the para-clinical subjects has not been worked out in the 2003 proposals. There is no significant difference in the clinical subjects although specific time has been allotted for emergency medicine, blood bank, ethics, tropical medicine and common poisons.

EXAMINATION REGULATIONS:

a) Attendance: Attendance has now been uniformly fixed at 80% for both lecture and non-lecture teaching whereas it was 75% for lecture and 80% for non-lecture previously. A very important proposal and one which requires careful consideration is the suggestion that a candidate who does not fulfill the 80% attendance clause should not be allowed to go to the next term so that he can put in the additional hours required to earn that percentage.

b) Internal Assessment: The weightage for Internal Assessment is the 1997 regulations and the new proposal is shown in chart 4. It varied previously from 13.3 to 21.0% for theory and 25.50% in clinicals. Overall it was 20% of the total marks in the subject. In the new proposals the overall weightage is reduced to 15% since the 20% is calculated only as a proportion of theory and practical marks and not overall as a percentage of the cumulative total in that subject. The weightage in theory ranging from 16.7 - 20% and in practical from 12.5 - 14.3%. In a skill based profession where terminal evaluation would always remain inadequate, one would have expected the weightage to increase over a period rather than reduce.

c) Examination subjects (chart 5): The first and second professional examination subjects remain unchanged. Major changes are proposed in the Phase III Part I. (Third professional examination). This would now consist of a combined paper in Eye and ENT, community medicine, pediatrics, medicine paper I with psychiatry, dermatology and STD and surgery Paper I with orthopedics, traumatology and anesthesiology. Since pediatrics has been shifted to the prefinal phase, the third professional Part II examination will now have only three subjects.

d) Marks distribution (chart 6): A welcome proposal is to have a uniform policy of 100 marks and 3 hours for all theory papers unlike previously when theory papers varied from 40 to 60 marks.

The oral marks have been fixed as 30 per subject having one paper and 60 for those with two. Likewise the marks for clinicals / practicals would be 40% for subjects with one paper and 80% per subjects with two papers.

e) Pass criteria:

i) Important changes have been prescribed in the pass criteria. The oral examination marks would now be added to clinical or practical marks rather than theory and the pass criteria would be 50% in theory and 50% in practical / clinical including oral. No mention is made as to whether Internal Assessment marks are to be included for determining pass marks.

ii) It is not clear in ENT and Ophthalmology which now have a combined paper but different

clinicals & orals what would happen to a candidate who fails in one subject and clears the other.

iii) There is no mention of permissible grace marks. Previously upto 5 marks were available as grace marks to help those candidates who have failed in only one subject if the deficiency in the failed subject was 5 marks or less.

Internship (Chart 7)

The most radical changes have been proposed in the internship schedule to reduce the total duration to six months. The changes in individual subject are shown in the chart. Effectively, in spite of the stress on the community, PSM posting would be reduced to 1.5 months and surgery effectively to only 15 days. Also the welcome 1 month elective offered by MCI 1997 has been reduced to 15 days. On the face of it there is no apparent logic in the changes sought to be brought about during internship.

To sum up, although the proposed changes are still not finalized nor have they an official status, it is important that the proposals are widely discussed and debated to enable intelligent changes to be made where necessary instead of being rushed along by the force of circumstances to yet another experimentation in medical education while we are still to be sure of the desirability or otherwise of the changes introduced in 1997.

Chart I: Phase Distribution and timing of examinations

				M.C.I. 1997			
Semester	6 months	6 months	6 months				Examination
	1	2					First Professional
	3	4	5				Second Professional
	6	7					Third Professional-Part I
	8	9					Third Professional-Part II
	12 months						Internship
				M.C.I. 2003			
Terms	5 months	5 months	5 months				Examination
	1	2	3				Phase I
	4	5	6				Phase II
	7	8	9				Phase III, Part I
	10	11	12				Phase III, Part II
	6 months						Internship

Chart 2: Hospital Postings (in weeks)

DEPARTMENT / SUBJECTS	MCI 1997	MCI 2003	Change
General Medicine including ID and TB	28*	26	-2
General Surgery including Anesthesia	26	26	0
Obst. & Gyne. including Family Planning	24	24	0
Pediatrics	10	12	+2
Orthopedics	10	10	0
E.N.T.	8	10	+2
Ophthalmology	10	10	0
Community Medicine	12	8	-4
Dermatology	6	4	-2
Psychiatry	2	4	+2
Radiology	2	4	+2
E.M.S.	2	4	+2
Dentistry	2	2	0
Total	142	144	+2

* Including Tuberculosis - Previously shown separately

Chart 3: Teaching Hours

SUBJECTS	MCI 1997	MCI 2003
Anatomy	650	800
Physiology	480	600
Biochemistry	240	300
Community Medicine	60	75
Pathology	300	-
Pharmacology	300	-
Microbiology	250	-
Forensic Medicine	100	-
Community Medicine	200	-
General Medicine	300	350
Pediatrics	100	130
TB & CD	20	20
Psychiatry	20	20
Skin & STD	30	30
Community Medicine	50	50
Anesthesia	20	20
General Surgery	300	350

SUBJECTS	MCI 1997	MCI 2003
Orthopedics	100	130
Ophthalmology	100	100
ENT	70	70
Radiology	20	20
Dentistry	10	10
Obst. & Gyn.	300	300
Emergency Medicine	-	150
Blood Bank	-	10
Medical Ethics	-	15
Tropical Medicine	-	15
Common poisons	-	10

Chart 4: Weightage for Internal Assessment (%)

1997			
SUBJECTS	Theory	Clinical/ Practical	Overall
Anatomy, Physiology, Biochemistry	14.3	33	20
Pathology, Microbiology, Pharmacology	14	47.5	20
Forensic Medicine	16.7	25	20
Ophthalmology, E.N.T.	16.7	25	20
Community Medicine	13.3	40	20
Medicine, Surgery	18	23.1	20
Pediatrics	16.7	25	20
Obst. & Gynae.	21	50	30
2003			
Anatomy, Physiology, Biochemistry	20	12.5	15
Pathology, Microbiology, Pharmacology	20	12.5	15
Forensic Medicine	16.7	12.5	15
Ophthalmology, E.N.T.	16.7	12.5	15
Community Medicine	20	12.5	15
Medicine, Surgery	16.7	14.3	15
Pediatrics	16.7	12.5	15
Obst. & Gynae.	20	12.5	15

Chart 5: Examination subjects

Examination	M.C.I. 1997	M.C.I. 2003
First Professional	Anatomy, Physiology, Biochemistry	Unchanged
Second Professional	Pathology, Microbiology, Forensic Medicine, Pharmacology	Unchanged
Third Professional Part I	Eye, ENT, Community Medicine	Eye + ENT - 1 paper Community Medicine, Pediatrics, Medicine - Paper I - Psychiatry - 50 marks; - Dermatology (STD + Leprosy) - 50 marks Surgery Paper I - Orthopedics - 40 marks - Traumatology - 30 marks - Anesthesiology - 30 marks
Third Professional Part II	Medicine, Surgery, Obst. & Gynae., Pediatrics	Medicine Papers II & III Surgery Papers II & III Obst. & Gynae.

Chart 6: Distribution of Marks in various subjects

Subjects		MCI 1997	MCI 2003
Anatomy, Physiology, Biochemistry	Theory	100	200
	I.A. (Theory)	20	40
	Oral	20	60
	Practical	40	80
	I.A. (Practical)	20	20
Pathology, Microbiology, Pharmacology	Theory	80	200
	I.A. (Theory)	15	40
	Oral	15	60
	Practical	25	80
	I.A. (Practical)	15	20
Forensic Medicine	Theory	40	100
	I.A. (Theory)	10	20
	Oral	10	30
	Practical	30	40
	I.A. (Practical)	10	10
Ophthalmology, ENT	Theory	40	100*
	I.A. (Theory)	10	20
	Oral	10	30
	Practical	30	40
	I.A. (Practical)	10	10

*One combined paper

Community Medicine	Theory	120	200
	I.A. (Theory)	20	40
	Oral	10	60
	Practical	30	80
Medicine, Surgery	I.A. (Practical)	20	20
	Theory	120	100+200
	I.A. (Theory)	30	20+40
	Oral	20	30+60
Obst. & Gynae.	Clinical	100	40+80
	I.A. (Clinical)	10	10+20
	Theory	80	200
	I.A. (Theory)	30	40
Pediatrics	Oral	30	60
	Clinical	30	80
	I.A. (Clinical)	30	20
	Theory	40	100
	I.A. (Theory)	10	20
	Oral	10	30
	Clinical	30	40
	I.A. (Clinical)	10	10

Chart 7: Internship schedule

Subject	MCI 1997	MCI 2003	Changed
Community Medicine	3 months	1.5 month	-1.5 month
Medicine*	2 month	1.0 month	-1.0 month
Surgery + Anesthesia**	1.5 month	1.0 month	-0.5 month
Obst. & Gynae	2 months	1 month	-1.0 month
Pediatrics	0.5 month	0.5 month	0 month
Orthopedics	0.5 month	0.5 month	0 month
Ophthalmology	0.5 month	0 month	-0.5 month
E.N.T.	0.5 month	0 month	-0.5 month
EMS	0.5 month	0 month	-0.5 month
Elective	1.0 month	0.5 month	-0.5 month
Elective	Skin	Skin	
	Psychiatry	Psychiatry	
	T.B.	T.B.	
	Anesthesia	Included with Surgery	
	Radio-diagnosis	Radio-diagnosis	
	Physical Medicine	Physical Medicine	
	Forensic Medicine	Forensic Medicine	
	Blood Bank	Included with Medicine	
		Ophthalmology	
		E.N.T.	
Total	12.0 month	6.0 month	-6.0 month

* Including Blood Bank

** Previously not including Anesthesia

EDUCATIONAL PROJECTS INITIATED DURING 48TH NATIONAL COURSE

The 48th National Course was held at JIPMER, Pondicherry from 23rd February to 3rd March 2004. The following projects were presented by the participants and approved. We wish them speedy execution of the projects and looking forward for receiving the final report.

Submitted by	College	Title
1. Dr. M. Janaki,	Kurnool Medical College, Kurnool	Formulation of MCQ banking at the Department of Pathology in Kurnool Medical College, Kurnool
2. Dr. A Surekha	Kurnool Medical College, Kurnool	Improving the learning outcome of slow learners in Microbiology Department
3. Dr. A. C. Ashok	M.S.Ramiah Medical College, Bangalore	Training and suturing techniques on mannequins model
4. Dr. Vijaya V. Mysorekar	M.S.Ramiah Medical College, Bangalore	Integrated teaching for MBBS students.
5. Dr. B. Manjunatha,	J.S.S. Medical College, Mysore	Aiding Slow Learners to do better
6. Dr. Neeta V. Kulkarni	Dr. SMCSI Medical College, Trivandrum	Problem solving approach in day to day T/L/E of Gross Anatomy in I MBBS students
7. Dr. S. Babu Raj,	Dr. S.M.C.S.I. Medical college, Trivandrum	Evaluation of MBBS students by OSCE and OSPE in clinical Pediatrics
8. Dr. Jayashree S. Pandya	T.N. Medical College & Nair Hospital, Mumbai	Facilitating and counseling low achievers
9. Dr. Ching Ling Yi,	T.N. Medical College & Nair Hospital, Mumbai	Introduction of (Problem based learning) in teaching methods.
10. Col. M.N. Sree Ram	Armed Forces Medical College, Pune	Introduction of practical training in emergency Radio-diagnosis in the curriculum for undergraduate medical students.
11. Lt. Col. B.S. Deswal	Armed Forces Medical College, Pune	Objective structured clinical / practical examination of MBBS students in Preventive and Social Medicine.
12. Dr. Shaligram Dhungel,	B.P. Koirala Instt. of Health Sciences, Nepal	Item Analysis of Anatomy based MCQs administered at B.P. Koirala Instt. of Health Sciences, Dharan, Nepal.
13. Dr. M.I. Sheikh,	Surat Municipal Instt. of Medical Education & Research, Surat	Problem based learning in second MBBS students in Forensic Medicine & Toxicology Department
14. Dr. G. Srinivas	The Tamil Nadu Dr. MGR Medical University, Chennai	Rating of Teaching Effectiveness by Students in a Medical College
15. Dr. M.K. Uthaya Sankar	Mahatma Gandhi Medical College & Res. Institute, Pondicherry	Item Analysis in General Medicine
16. Dr. A.R. Srinivasan,	Mahatma Gandhi Medical College & Res. Institute, Pondicherry	Skill Evaluation based on Objective structured practical examination on basis & clinical biochemistry
17. Dr. Sheela Kuruvila	Pondicherry Institute of Medical Sciences	Objective Structured Clinical Examination (OSCE) in Dermatology
18. Dr. Anita Ramdas,	Pondicherry Institute of Medical Sciences	Formulation of specific learning objectives in Haematology for MBBS students.
19. Dr. Latha Chaturvedula,	JIPMER, Pondicherry	Item analysis of MCQs in Obst. & Gyn. for undergraduate students.
20. Dr. L.N. Dorairajan,	JIPMER, Pondicherry	To develop a question bank of multiple-choice questions (MCQ) in Urology.
21. Dr. A.T.M. Farid Uddin,	Dhaka Medical College, Bangladesh	Provision of OSPE in department of Pharmacology, Dhaka Medical College, Bangladesh for undergraduate medical student.

Editorial:

A Lesson for India - Flexner's Impact on American Medical Education – Dr.K.R. Sethuraman



"...The curse of medical education is the excessive number of schools. The situation can improve only as weaker and superfluous schools are extinguished." - Abraham Flexner, 1910

The recent report from Maharashtra about the widely variable quality of health professional education is timely, and highly disturbing. The situation is by no means confined to that state alone nor is it limited to the mushrooming "capitation fee set ups." The scene is very much like what North America faced a hundred years ago. It calls for urgent action and effective remedies to usher in quality education.

How the USA and Canada achieved it in early 20th century may motivate the opinion makers and leaders among medical educators of India to try and do to our nation, what Flexner - supported by American Medical Association and Carnegie Foundation - could achieve a century ago. Therefore, this editorial on the life, times and achievements of Flexner is of tremendous significance to us.

By 1900, leaders in the American medical profession were fully aware of the over-production of physicians in a variety of poorly run proprietary schools, and by 1904 the American Medical Association (AMA) had created a permanent Council of Medical Education that surveyed and rated the nation's schools. Already by 1910 America's 166 medical schools had been reduced in number to 126.

Flexner was a high school principal who was appalled by American Collegiate education then. He gained national attention after he published his first book in 1908, *The American College*, a critical attack on American higher education. One of his fiercest critiques focused on the lecture

mode, which enabled colleges to "handle cheaply by wholesale a large body of students that would be otherwise unmanageable."

Concerned by the lack of quality in American medical education, the Carnegie Foundation commissioned Abraham Flexner to conduct a comprehensive and independent study of the nation's medical schools. His 1910 report, "Medical Education in the United States and Canada," is a classic work typical of the open and progressive era.

Flexner had never visited a medical school before he began his investigation. He began his visits in January of 1909 and finished April 1910. His aggressive schedule barely allowed him a whole day each for the evaluation of some schools. His efforts were closely linked with the AMA, which provided resources and support

Flexner compared each medical school to Johns Hopkins, an institution he considered ideal. Flexner examined the relationships of the medical school to a teaching hospital, the integration of teaching and working facilities into the general organization of fundamental laboratories at the medical school; unifying the medical school faculty and the hospital staff; and, affording professors the freedom to adopt necessary teaching arrangements (i.e. clinical rotations), subject only to concerns for the welfare of patients.

Clearly Flexner wrote strongly against proprietary institutions, smaller schools, those that did not emphasize science or specialism, and those with little equipment. He considered 5 areas during his visits. These areas included

School entrance requirements

Size and qualifications of faculty

Sum available from endowment and fees and budget

Quality and adequacy of labs and qualifications and training of lab teachers

The relationships between the school and its associated hospitals

Flexner recommended closing all three women's medical schools and several substandard "minority medical schools."

Although the 1910 report became famous for its stinging description of particular medical schools - he referred to Chicago and its 14 medical schools, for example, as "a disgrace to the State

whose laws permit their existence" - it was largely successful in creating a single model of medical education characterized by a philosophy that is still current. **"An education in medicine," wrote Flexner, "involves both learning and learning how; the student cannot effectively know, unless he knows how."**

The following are some of the quotes of Flexner from his Report:

Regarding Service to the Underserved

"The existence of many of these unnecessary and inadequate medical schools has been defended by the argument that a poor medical school is justified in the interest of the poor boy. It is clear that the poor boy has no right to go into any profession for which he is not willing to obtain adequate preparation; but this argument is insincere, and that the excuse which has hitherto been put forward in the name of the poor boy is in reality an argument in behalf of the poor medical school." (*in India it would perhaps now apply to "rich students" with low preparation/merit - editor.*)

Methods of Instruction

In methods of instruction there is nothing to distinguish medical from other sciences. Out-and-out didactic treatment is hopelessly antiquated; it belongs to an age of accepted dogma or supposedly complete information, when the professor "knew" and the students "learned." The lecture indeed continues of limited use. It may be employed in beginning a subject to orient the student, to indicate relations, to forecast a line of study in its practical bearings; from time to time, too, a lecture may profitably sum up, interpret, and relate results experimentally ascertained.

Some of his descriptions still ring true: "Each day students were subjected to interminable lectures and recitations. After a long morning of dissection or a series of quiz sections, they might sit wearily in the afternoon through three or four or even five lectures delivered in methodical fashion by part-time teachers. Evenings were given over to reading and preparation for recitations. If fortunate enough to gain entrance to a hospital, they observed more than participated."

Importance of Hands-On Training

The student is to collect and evaluate facts. The facts are locked up in the patient. To the patient, therefore, he must go. Waiving the personal factor, always important, that method of

clinical teaching will be excellent which brings the student into close and active relation with the patient: close, by removing all hindrance to immediate investigation; active, in the sense, not merely of offering opportunities, but of imposing responsibilities.

About Physician Numbers

The country needs fewer and better doctors; and the way to get them better is to produce fewer.

Foundations of Medical Education

The development of medical education is conditioned largely upon three factors:

- First, upon the creation of a public opinion which shall discriminate between the ill trained and the rightly trained physician, and which will also insist upon the enactment of such laws as will require all practitioners to ground themselves in the fundamentals upon which medical science rests.
- Secondly, upon the universities and their attitude towards medical standards and medical support.
- Finally, upon the attitude of the medical profession towards the standards of their own practice and upon their sense of honor with respect to their own profession.

Although the report is nearly 100 years old, many of its recommendations are still relevant - particularly those concerning the physician as a "social instrument, whose function is fast becoming social and preventive, rather than individual and curative."

A less well-known recommendation, but one that Flexner promoted unrelentingly, was for the creation of full-time clinical appointments in medical schools. Under this system, faculty members would become "true university teachers, barred from all but charity practice, in the interest of teaching." This was a campaign that Flexner pursued for years, despite opposition from "virtually all clinicians across the country."

By 1915 the medical schools in the USA had been reduced to 96 and by 1930 there were only 76 schools training the nation's physicians.

Flexner died in 1959, having seen much of what he hoped to accomplish. He was cautiously

optimistic, and quoted the ending of his book *Time to Heal: "There is still sufficient opportunity for visionaries to dream and leaders to act." What an appropriate thought for us now!*

Bharat Mata! Give us a Flexner too!

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"KNOW HOW" SECTION

**Flanders Interaction Analysis –
Dr. G.S. Moni**

Present scenario of our educational system is under a wide range of criticism. Teachers being the key resource persons in educational process, most of these criticisms are directed towards their teaching effectiveness. There is a growing demand to develop effectiveness of teaching to enhance learning.

The most dependable tool of assuring teachers effectiveness is student's rating of

instructions. It is found to be most reliable method of assuring teaching effectiveness and its reliability is found to be much more than any other tools. The effort of Rastogi commission to introduce students' assessment of teachers in Indian Universities attracted strong protest from teachers. "Indian students are not trained to be constructively critical of their teachers" was the main objection. They should be educated to assess the teachers with out injury to the dignity and image of their teachers and with out losing the respect for them. Cultivation of this evaluation ability among our students may take a long time. Till such time teachers have to resort to other forms of feed back from classrooms to assess their teaching abilities.

Peer evaluation by colleagues who sit with students and assess teaching and video recording of the classroom interaction are other forms of feedback. Both these forms depend on peers who are willing to spare time for such evaluation. Moreover teachers are not trained enough to assess the expected or desirable teacher behavior in the classrooms. Flanders interaction analysis is designed to assess the classroom interaction objectively and judge the competency of the teacher.

Flanders system of interaction analysis is done by a peer observer who is well trained to codify the teachers – students' interaction during a lecture. There are three possible events viz. Teacher action, participant action or confusion. These are further codified into seven classroom scenarios. Until a peer observer gets the expertise to codify a live lecture, it is better to record on video and then do off-line coding so that coding errors are minimized.

The attached proforma gives the seven codes, columns to codification, table for calculate cumulative score and finally the analysis and interpretation section. Though it appears quite complex, with experience it is quite easy to implement Flanders analysis for giving objective feed back in classroom lectures.

INTERACTION ANALYSIS PROFORMA

CODE:

I. TEACHER ACTION

1. **Initiation:** a) Gives directions for compliance
b) Comments/Criticises with authority
2. **Talk:** lectures or gives facts
3. **Elicit:** Asks questions (actual or rhetoric)
4. **Emotional appeal:** a) Accepts feeling
b) Encourages/praises

c) Accepts and uses participant's ideas

II. PARTICIPANT ACTION

- 5. Responds to teacher's query
- 6. Initiates interaction (not teacher controlled)

III. INACTION

- 7. Confusion or long silence

TABULATION BY OBSERVER

Topic:..... Date:.....
 Lecturer :

Code (1-7)	Duration		Code (1-7)	Duration		Code (1-7)	Duration	
	Min	Sec		Min	Sec		Min	Sec



CALCULATION TABLE FOR CUMULATIVE SCORES

Code		Tabulated Duration (to be totaled)	Total	
			Min	Sec
I	1			
	2			
	3			
	4			
II	5			
	6			
III	7			

ANALYSIS

A. Teacher: Student Actions Ratio - I: II : III = : : (Ideally, III to be < 5%
 II to be 40% or better)

B. Ratio of Indirect to Direct Influence:

$$\frac{\text{Total of 3 + 4}}{\text{Total of 1 + 2}} = \text{Ideal} > 1 \text{ (Indirect should be 50\% or more)}$$

C. Teacher Response Ratio:

$$\frac{4}{4+1} \times 100 = \% \text{ (Index of Teacher's tendency to react and of emotive appeal)}$$

D. Teacher Question Ratio:

$$\frac{3}{2+3} \times 100 = \% \text{ (at least 25\%) (Higher the percentage more "Socratic" is the lecture)}$$

E. Participant Initiation Ratio:

$$\frac{7}{6+7} \times 100 = \% \text{ (at least 30\%) (Higher the percentage more 'democratic' is the lecture)}$$

Feedback:

OBSERVER

TELEMEDICINE AT JIPMER

JIPMER started experimenting with telemedicine in December 1999 by organizing a "show - how" technology demo. Subsequently online seminars and workshops were conducted with Dr. M.G.R. Medical University, Chennai over ISDN line. A proposal was sent to Indian Space Research Organization (ISRO) for providing telemedicine connectivity to various institutions through satellite. ISRO has now provided the satellite connectivity for both telemedicine and tele-education to enable this Institute to link with other institutions. The programme on "Coronary artery diseases" was conducted along with the G.B. Pant Hospital, Andaman & Nicobar Islands. It is envisaged that a network of Institutions is to be formed with this cutting edge technology to enhance information exchange between Institutions. This Institute would like to have partners in this project. Those desirous to join, may contact the Project Officer, NTTC with the following email addresses: nttc@rediffmail.com or narayan-k@etc.net

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