

INTEGRATED TEACHING IN MEDICAL EDUCATION IN INDIA

Shilpa Khullar

Introduction:

Integration is defined as combining or co-ordinating separate elements so as to provide harmonious inter-related whole¹. It means organisation of teaching matter to inter-relate or unify subjects frequently taught in separate academic courses/departments.

It is also called synergistic teaching, inter-connected teaching, thematic teaching because on the same topic different subject experts will deliver their knowledge at the same time.

Integration of teaching is defined as the organisation of teaching matter to interrelate or unify the subjects which are frequently taught in separate academic courses or departments². It means bridging connections between academic knowledge and practicals³.

The medical curriculum is vast and students are expected to learn many subjects at the same time. The teachers are also involved in a number of activities like research, administration, updating their knowledge etc. In doing so, teaching undergraduate medical students frequently remains a separate academic department without integration to inter-relate/unify the subjects. Hence current medical education imparts knowledge in a disjointed manner and does not allow student to develop the skills to investigate, analyse and prepare to perceive the patient as a whole⁴.

The General Medical Council of UK has advocated introduction of Integrated Teaching and Learning in their medical course⁵. Similarly the Medical Council of India has recommended introducing horizontal and vertical integration for teaching undergraduate medical students as early as 1997⁶ (**Fig 1**) and then in the recent Vision 2015 document⁷. Yet, this has not become popular in most medical colleges in India.

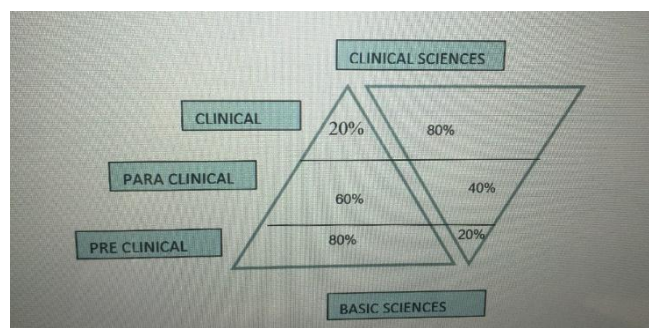


Fig 1: Proposed integration scheme for MBBS curriculum⁶

The need for integration is also felt by the students. Students find the pre-clinical subjects drab and boring. One of the main reasons is the theoretical and fragmented manner in which they are taught by each pre-clinical department at different time, without any knowledge of what is taught by the other departments. The disjointed approach to the topic leads to unnecessary repetition, loss of valuable time and also creates confusion in the students' mind².

The way students learn is largely driven by the way they are assessed. It is essential to move away from the knowledge dominated examination to more skill oriented examination. The teacher is the corner stone of any system of education. Appropriate method of selection and adequate training in the technique of teaching will improve the quality of teaching¹.

Why do we need integration?

Since medical education is related to community services we need to teach our students to correlate the various subjects to create better doctors. Teaching different aspects of a topic by faculty members of relevant departments instead of one department will help them to assimilate knowledge in a better way. To improve diagnosis and better treatment of patients and to improve quality of students learning, integrated teaching is the need of the hour⁸.

Medical Colleges in India usually follow a traditional curriculum, characterised by discipline wise model. There is a high degree of

compartmentalisation of subjects as basic sciences, pre-clinical, para-clinical and clinical branches. This leads to unnecessary repetition and confusion in a student's mind due to difference of opinion leading to improper grasping of the subjects. This discourages the students from learning and they get disinterested in applying knowledge achieved into practice. Thus, the MCI has been compelled to adapt a need based curriculum for undergraduate medical education in India.

Regulations on graduate medical curriculum 1997 recommends a teaching approach characterised by maximum effort to encourage integrated teaching between traditional subject areas using a problem-based learning (PBL) approach and to de-emphasise compartmentalisation of disciplines so as to achieve both horizontal and vertical integration in different phases in order to provide the students with a holistic rather than a fragmented learning perspective⁹.

There are many flaws in the present teaching system that is employed in our setup and is based mainly on didactic lectures¹⁰ :

1. Students are passive listeners
 2. There is no exposures to critical thinking
 3. No active learning
 4. Students find it difficult to correlate all three preclinical subjects and apply their knowledge to transfer this information to clinical practice
 5. Discourages students from learning
 6. There is lot of confusion in their minds and therefore any subject as a whole is never grasped
 7. Unnecessary repetition of facts and information by different departments.
- As compared to the traditional curriculum integrated teaching has various advantages^{1,10} :
1. System wise teaching (Block wise)
 2. Integration along with case oriented approach
 3. Student centred (learner's oriented)
 4. Promotes interdepartmental collaboration
 5. Students learn to apply their knowledge to clinical practice
 6. Prevents repetition and wastage of time
 7. An integrated approach improves understanding and motivates students develop interest in the topic

Types of integration

There are four main components of Integrated Teaching¹¹ :

1. Integration of experience
2. Social integration
3. Integration of knowledge
4. Integration as a curriculum design

MCI has recommended integration where concerned departments come together and content of the curriculum is presented by staff members. A programme prepared jointly by a group of persons is less liable to error than one prepared by a single person. The different types of integration include¹² :

1. **Horizontal integration** : Where pre-clinical, para-clinical and clinical departments integrate independently whereas in **vertical integration** all these departments integrate one topic
2. **Topic** : Some topic of common interest can be selected and horizontal/vertical integration is done
3. **System** : Integrated teaching is carried out for a particular body system
4. **Health issues** : Integration is done to discuss a common health issue

Ways of integration¹²

1. Horizontal / Vertical
2. Through early clinical exposure (ECE)
3. Problem based learning (PBL)
4. Small group laboratory exposure

Harden³ described 11 steps of the integration ladder- a tool for planning, implementing and evaluating (**Fig. 2**)

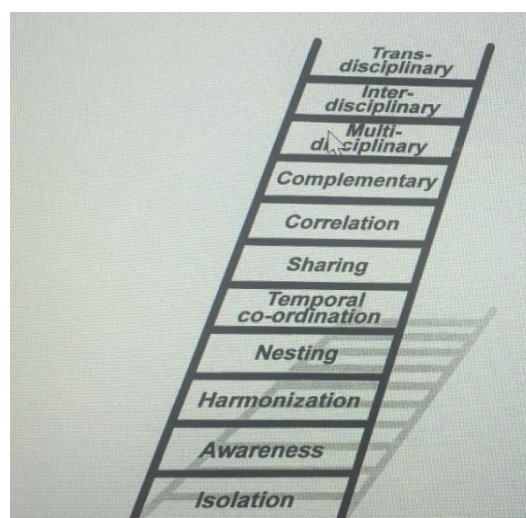


Fig 2: 11 steps on the integration ladder³

As one moves up the ladder, there is less emphasis on the role of disciplines, an increasing requirement for a central curriculum, organizational structure and a requirement for greater participation by staff in curriculum discussions and planning. The integration ladder is a useful tool for the medical teacher and can be used as an aid in planning, implementing and evaluating the medical curriculum.

Planning for integrated teaching

Rashmi Vyas¹³ has recommended a learning module which is a planned unit of educational experiences which is multidisciplinary

Check list for developing and implementing an integrated teaching learning module is as follows :

Step 1: Core group formation

Step 2: Develop the goal of integrated programme

Step 3: Frame the specific learning objectives aligned of the goal

Step 4: Choose appropriate teaching learning methods and assessment aligned to the specific learning objectives

Step 5: Develop resources

Step 6: Conduct faculty training programmes

Step 7: Conduct student orientation programme

Step 8: Evaluate the programme

Step 9: Use evaluation findings to modify/improve the programme

Some examples of modules are¹² :

1. **Topic -based modules** : Develop from multi-disciplinary topics e.g. UTI, DM, Tuberculosis and Hypertension
2. **Problem-based modules**: Develop from multi-disciplinary clinical problems e.g – acute abdomen, headache and shock
3. **Task-based modules**: derived from multi-disciplinary tasks e.g -first aid and CPR

Disadvantages of integration

Some disadvantages of this particular teaching methodology have also been cited by some authors. According to Dandannavar at al.¹⁰ colleagues from one's own department may not support in the implementation procedure, lack of expert facilitators, difficulty in framing time table with number of teaching hours allotted to the three different preclinical subjects and ignorance of few faculty members might pose a problem in implementing this teaching module. While S. Joglekar⁸ has mentioned lack of cooperation,

additional staff work in organising the course as some of the disadvantages. The more the links in the chain of communication, the more likely that one will break.

Studies done in India

A project was designed to teach Diabetes Mellitus to undergraduate second MBBS students in an integrated fashion. Hence the faculty of pathology and medicine were sensitised to this and feedback from both were analysed .80% of the students were enthusiastic about the new teaching methodology and felt that they had better clinic-pathological correlation .20 % felt that a lot of time was spent on teaching a single topic,87% held the opinion that their method helped them to retain the subject better,75% appreciated the fact that they could relate to the clinical aspects and wanted this approach to be extended to other topics as well. The new teaching learning method of integrated teaching was found to be more effective than the traditional one .This was well accepted by the faculty as well as the students. Students showed better clinic-pathological correlation along with improvement in cognitive and psychomotor domain. Overall both students and faculty had a positive attitude towards this innovation in education⁴.

An institutional intervention study was carried out at a Government tertiary care teaching hospital in Kolkata, West Bengal. This medical school offered a non-integrated discipline based curriculum where teaching activities involved didactic lecturing mainly⁹.

Study population comprised of 5th semester students aged between 21-24 years , studying in the same medical college. Statistically significant results were observed using pre and post test questionnaire of integrated teaching. Similarly statistically significant results were obtained using post-test results of traditional teaching and integrated teaching. The study results indicate that interest in integration of curriculum was high among faculty members ,60% told it is very useful and 20% felt it is useful. Individual faculty members were interested in increasing integration, but the current level of integration was not adequate like other previous studies on this topic¹⁴⁻²².

The findings and experience of this study supports the view of other studies that such newer

methods of education help to increase teacher-student and teacher-teacher interaction and that integrated teaching method avoids fragmented method of teaching where teachers are not aware of what is taught in other subjects. It also removes subject phobia and helps the students to develop interest in the topic. The study showed that it is possible to adopt an integrated learning methodology in medical teaching under a conventional curriculum inspite of all the challenges. The integrated teaching was found to be more effective than the traditional one. Significant results were obtained by comparing integrated with the traditional method⁸.

Some of the recommendation of the study were ⁸ :

1. Students' enthusiasm and motivation have to be kept active for permanent implementation of the integrated teaching method
2. Considering the volume load which the students are subjected to, it can definitely save time and energy and give them better insight into the subject.

A study was done in the year 2009 to analyse the results of a survey of students regarding the integration of their institution's health science curriculum. 125 students of the 5th term of UG medical courses were given a questionnaire on the integrated sessions. The responses were evaluated on a five point Likert scale with a minimum of one and a maximum of five rating. 91.8% of the students felt that integrated teaching helped in the appreciation and application of the basic science knowledge to health and disease. 82% agreed that integrated teaching improved the performance in clinics and university examinations. The responses were equally distributed between traditional and integrated teaching while 33.6% of the students were indecisive, 51.7% preferred horizontal to vertical integration¹⁷. The study concluded that it was possible to adopt integrated teaching under a conventional curriculum in spite of all the challenges. The volume load that students are subjected to, it can definitely save their time and energy, giving them better insight into the subject¹⁷.

A study was conducted to introduce integrated learning programme for first year undergraduates

with an aim to develop, implement and evaluate a module of CNS in basic sciences and to assess the feasibility of an integrated learning programme in phase I of medical education in a college following traditional medical curriculum.

An appropriate time table was developed following inputs from basic sciences and clinical departments. Various teaching learning methods, themes for integrated didactic lectures, case based learning and clinical exposure were decided. Basic sciences faculty were made to participate actively in both case based learning and hospital visits along with clinical experts. The completed programme was evaluated based on a structured questionnaire

68% students rated the programme good to excellent with reference to appreciation, understanding and application of basic science knowledge in health and disease. 68% of students and 72% of the faculty felt that this programme will help them to perform better in later days of clinical practice against 72% who felt that this programme will not help them to perform better in the first professional examinations. The adoption of present integrated module for CNS and the use of multiple teaching methods have been proven to be useful in acquisition of knowledge from the students satisfaction point of view. Students and faculty expressed an overall satisfaction towards integrated learning programme for CNS. This study showed that it is possible to adopt an integrated learning module in the first year of medicine course under a conventional curriculum²³.

Constraints imposed by traditional teaching barriers are broken in integrated teaching and all the aspects of the same theme are covered by different subject experts. Current undergraduate curriculum is fragmented and discipline based. It does not allow the student to apply the knowledge in context and make links between their learning and clinical experience. MCI has also reduced the duration of 1st MBBS to one year which some feel is insufficient. In conventional teaching some topics that are common to different subjects are repeated leading to wastage of time and resources¹.

A study was conducted on 150 MBBS students in Ahmedabad, Gujarat. The subjects chosen included Anatomy, Physiology, Biochemistry and

Pharmacology. Pre and post - test evaluation was carried out and a questionnaire was provided for the feedback of students. Most of the students liked the session of integrated teaching (75%) and found it very useful. Many students appreciated the content and presentation of teaching module (80.6%) and wanted the integrated teaching programme for regular teaching (83.6%). Out of 144 students, only 7 were not in favour of this methodology¹.

The only negative feedback by the student was the lengthy time that they were supposed to attend. They gave suggestion about giving them frequent breaks during the whole process of integrated teaching. It can enhance teacher-student and teacher-teacher interactions, reduce redundant content and integrate disciplines. This is in line with the work done by Chan WP et al²⁴ in the year 2008.

A study was done recently in the year 2015 to analyse the perception of the students towards integrated teaching. They were queried regarding their attitude towards integration in order to expose the barriers to integration and to identify a potential mechanism to facilitate the implementation of the integrated curriculum²⁵. 100 students of 2nd MBBS were included in the study, their feedback was taken by preparing a questionnaire. The questions were framed keeping in mind the utility of integration, understanding, appreciation and the application of clinical knowledge to health and disease

85% of students agreed that integrated teaching helped in appreciation and application of basic sciences knowledge to health and disease, improving their performance in clinics and university examinations. 24% of the students preferred traditional teaching to integrated teaching and 24% felt that horizontal integration is better than vertical integration. 22% of the students could not give their decision on general concepts of integrated teaching. The positive aspects listed by students included: improved the application of knowledge (100%), created interest in the subject (98%), boosted their confidence and speaking skills (93%), broadened their horizon about the medical application in various situations (96%), provided extra information (94%), interaction and participation by all (91%), motivated the students to study (95%), good

concept (97%) and revision of topics covered in theory and practical classes (96%). Overall the positive response was 95.6%. Negative perception was seen in 35.4% of the students. They felt that it is time consuming, cuts down the time of self study (48%) and is lengthy (51%).

On analysing the perception of students regarding various teaching methods to be adopted in integrated teaching they suggested that interactive sessions and out of classroom teaching were the most preferred methods of integrated teaching²⁵.

Several areas of redundancy, repetition and overlapping along with observation of a gap between qualitative and quantitative advancement in medical education and achievements in the field of healthcare prompted the MCI to adapt a need based curriculum for undergraduate medical education in India. Medical education is rapidly changing with more than half of American schools being engaged in curricular reforms. Many of these modifications focus on implementing horizontal/vertical curricular integration. In the present study integrated teaching was perceived to be useful by a majority of the students with regards to an improvement in the appreciation and application of basic science knowledge. A similar finding was noted by Vyas et al²⁶.

Vidic et al²⁰ have suggested that it is imperative for the success of the new curriculum that certain criteria should be satisfied:

1. To reorganise the basic science department – to determine the course ownership
2. Establish a reward system for the teaching faculty
3. Establish a course objective

The students recognised that integrating the medical subjects was useful and of interest to them and it should be continued. 24% of students preferred traditional teaching to integrated teaching and 43% of students felt that horizontal integration is better than vertical integration. Overall 95.6% of students felt that integrated teaching is advantageous with negative perception in 35.4% of the students. They felt that it is time consuming, cuts down time of self-study and is lengthy.

Rajiv Gandhi University of Health Sciences (RGUHS) curriculum proposes 30 hours of integrated teaching in the Dept. of Medicine – 148 Hrs for IInd MBBS-i.e 36 Hours in Pathology, 36 Hours for Microbiology, 10 Hours of Forensic Medicine, 36 Hours of Pharmacology and 20 Hours for Community Medicine. To improve the methodology and to know the benefits and pitfalls of the same, a study on feedback evaluation of the programme was undertaken. 105 MBBS students belonging to IInd phase, were the subjects. This was a vertical module of integrated teaching and the topic chosen was Hepatitis B, students answered a pre-test questionnaire with 5 questions, concerned with areas of strengths of integrated teaching, which aspects helped them learn, time management and also included open and closed ended questions. The grey zone in this integrated teaching programme was found to be time management, 43% felt that the duration of teaching programme was prolonged and needed breaks. They suggested more videos, pictures and even a tea break was needed to break the monotony. Few students felt that the topic should be announced earlier so that it would improve their understanding²⁷.

Doraiswamy R et al.²⁸ in their study revealed that the average marks obtained by students after an integrated teaching programme was greater than the marks obtained by students after a conventional teaching programme. Students trained with integrated curriculum were more accurate in their diagnosis of clinical disorders than those trained in conventional curriculum. Integrative curriculum improved the cognitive and psychomotor domain of students and creates interest in topics eliminating any fear towards the subject.

Integrated teaching is a learning experience not only for the students but for the faculty also. Students perspective has motivated the teaching faculty to conduct more integrated teaching programmes on different topics²⁸.

A prospective questionnaire based study was conducted among 102 final year MBBS students at a tertiary care medical college hospital in South India. Integrated teaching was implemented by the active participation of faculty from Physiology, Pathology and General Medicine. The students were taught about the different aspects of COPD.

Students knowledge before and after the session was evaluated by a questionnaire of 20 questions (pre-test and post-test). The mean score before and after the test was compared using student 't test'. The students were asked to give the feedback about the usefulness of this method in improving their knowledge. Majority of the students opined the need for integrated teaching to be a part of the medical curriculum. Most of them (54.9%) felt the need for integrated teaching to be conducted monthly²⁹.

The students were asked to grade their knowledge on a scale of 1 to 10 before and after the session. The mean score was found to be statistically significant.

To enhance the effectiveness of integrated teaching, the topic must be defined in terms of theme, content, sequence and relationship of the contents with the learning process. This can be achieved by co-ordination and adequate pre-session planning by the inter-departmental teachers. These are time consuming and requires commitment on part of the teachers and subject experts to give good results²⁹.

The MCI in their "Vision 2015" document has recommended curricular reforms for undergraduate and postgraduate medical students. Some of the recommendations for the undergraduate medical students include a foundation course at the beginning of 1st year, an integrated curriculum, early clinical exposure (ECE), student doctor method of clinical training, electives, skill development training and secondary hospital exposure⁷.

Early clinical exposure and integrated teaching learning are two of the curricular reforms recommended by the MCI in the first year of undergraduate medical studies⁷.

The need for Early Clinical Exposure: For generations, medical students have spent the preclinical years in classrooms and laboratories, memorizing body parts and dissecting specimens, eagerly anticipating the clinical years when they would see and learn from patients. This divide between pre-clinical and clinical years has been the norm since a century ago providing a theoretical basis for clinical medicine³⁰. Traditionally the foundation years of medical students have made them thorough in biomedical sciences but have hardly provided them with any

clinical experience³¹. Lack of early clinical experience has shown to demotivate students and make them prone to negative emotions when they finally enter the clinical environment³¹. On the other hand early clinical exposure “helps medical students socialize to their chosen profession. It helps them acquire a wide range of subject matter and makes their learning more real and relevant. It has potential benefits for other stakeholders, notably teachers and patients and can influence career choices³⁰.”

Hybrid curriculum where an integrated learning module is implemented within the framework of a traditional discipline based curriculum has been developed and implemented by medical colleges in India^{32,26}. Sri Ramachandra Medical College and Research Institute, Chennai, India has tried to shift from traditional discipline based to integrated curriculum in the recent years. However, evaluation of their integrated curriculum after their first group of students have completed is awaited.

The Way Forward: Even though the need for ECE^{33-34,30-31} and integrated teaching and learning has been well recognized globally and the MCI recommends its use for first year medical students, yet it is challenging to implement in any medical college^{35,3}.

One of the major challenges is the need for faculty to be trained to design and implement ECE and Integration modules. Efforts have been made to initiate faculty development programs in India including preconference workshops in ECE and integration conducted at the National Conference of Health Professions Education (NCHPE) 2011 at Christian Medical College, Vellore. A preconference workshop on ECE was also conducted at the South East Asia's Regional Association of the World Federation for Medical Education (SEARAME)-NCHPE 2012, international conference on health professions education at PSG Coimbatore. Medical Council of India has also initiated the Curriculum Implementation Support Program (CISP) to train faculty in the new curricular reforms proposed in the new graduate medical regulation¹³.

A study was conducted on 146 second year MBBS students where they were exposed to didactic lecture module (DLM) and integrated lecture module (ILM). The didactic lecture on

chemotherapy of malaria was taken by Pharmacology faculty for 60 minutes, while integrated lectures on same topic were taken by Pharmacology, Microbiology, General Medicine and Community Medicine faculty. 20 minutes were allotted for each faculty. After the lectures, the evaluation of effectiveness of ILM and DLM was done by a feedback questionnaire with 10 questions. In the feedback questionnaire, 95% of the students opined that ILM improved their understanding and learning skills. 77% opined that ILM enhanced their intellectual curiosity and brought concept clarity. 84% stated that the knowledge gained in ILM would help them in clinical practice. 88% stated that they are able to score better in exams when taught in ILM whereas only 12% stated that they are able to score better in exams even when taught by DLM. Hence it was concluded that integrated teaching improved learning skills of students³⁶.

Integration of subjects, facilitates acquisition of knowledge, skills and attitudes to 'theoretical' subjects in a clinical context in comparison to traditional teaching. The utility of integrated lecture modules (ILM) was accordingly planned and the objective of the study was to evaluate the performance and to document the perception of 2nd year MBBS students exposed to both the integrated and didactic lecture modules. The project was executed on 140 students who were randomly divided into 2 groups; group I (n=70) was exposed to didactic lecture (DLG), group II (n=70) to integrated lecture (ILG). The didactic lectures were taken by Pharmacology faculty, while integrated lectures by Pharmacology, Preventive and Social Medicine and Pediatrics faculty. Before the session, students appeared for a pre-test consisting of 20 MCQs. Following the post test, the evaluation of the perception of students regarding this study was done by administering an 18 item feedback questionnaire. The agree and disagree comments from the respondents were expressed in percentage and the pre and post- test scores were analysed using the 't test'.

The mean pre-test MCQ score in the DLG was 6.95 ± 1.38 , which increased to 13.84 ± 3.79 in post-test. Similarly, the mean pre and post test scores of ILG were 6.17 ± 1.54 and 17.64 ± 2.68 respectively. In the feedback questionnaire 96%

students opined that ILM improved their understanding (versus 77% for DLG) and 83% students stated that the knowledge gained in ILM will help them in clinical practice (versus 73 % in DLG).

It was concluded that implementation of vertical integration among pre, para and clinical subjects is beneficial as observed by the improved performance of students when exposed to ILM and as indicated by their response in the feedback³⁷.

An integrated approach to teaching medical subjects is an effective educational strategy. Yet, this has not become popular in medical colleges in India. An integrated learning programme was undertaken to teach GIT to first year medical students. It was conducted for 3 years (2003-2005) incorporating elements of problem-based learning, early clinical exposure, lectures and small group laboratory work. Student assessment was formative (for problem-based learning sessions) and summative (using problem-based learning and knowledge tests). Evaluation of the programme was based on feedback from the students and faculty members²⁶.

96% of the students obtained more than 60% marks in the problem-based learning test. Majority of students received satisfactory and more than satisfactory grades for their performance in the problem-based learning sessions. The feedback from faculty members and students was positive, which highlighted benefits such as integrated learning of the basic sciences, their application to clinical cases and active student learning. The challenges encountered included the higher input required from faculty members. However the faculty members and students recommended that the integrated programme should be continued and extended to other parts of the curriculum. Hence it was concluded that the integrated learning programme is feasible within a conventional medical curriculum of an Indian medical college²⁶.

Physiology is the backbone of any medical curriculum that a student gathers and like any other branch of medicine is progressing by leaps and bounds. What a student learns and imbibes in the first year of MBBS curriculum

forms the base of his future. Earlier studies have emphasized on such horizontal integrated sessions to prevent repetition of same topics by different faculties, to save time, leading to a better understanding of a topic and avoiding confusion amongst the students³⁸⁻³⁹.

Implementation of new method of teaching in Physiology could pose the following problems:

1. Lack of co-operation from other departments
2. Additional work for staff members in organizing the module
3. Colleagues from own department may not support in implementation procedure
4. Lack of expert facilitators
5. Difficulty in framing time table with number of teaching hours allotted to the three different preclinical subjects
6. Ignorance of few faculty members¹⁰

A study was conducted to compare integrated teaching with traditional lecture method for first year MBBS students at an institute in Mumbai. Out of 100 students 82 participated in the study voluntarily. Two study groups each of 41 students were formed: Group I was exposed to integrated teaching and Group II to traditional lecture method. A test was conducted subsequently and the data was analyzed using students unpaired 't test'. Feedback questionnaire form was obtained from students and teachers. Statistically significant difference in the marks was obtained and the integrated teaching was found to be more effective than the traditional lecture method. Teachers' and students' feedback was positive towards the integrated teaching method. Thereby it was concluded that integrated teaching is a better method that needs to be implemented on a wider scale in medical education¹⁴.

All over the world there are 1350 medical schools out of which 140 are in India. Majority of these medical schools follow traditional curricula in teaching. This is disciplined based, teacher centered, examination oriented, where in learners are

presented with a series of discipline or building blocks in isolation. Such modules are under criticism for placing too much emphasis on memorization of facts and figures and for overloading the students with excessive details⁴⁰.

To be an effective teacher the faculty members must have content knowledge, pedagogical knowledge and knowledge of the learner and his/her characteristic. They should understand their students learning attitude and learning style preferences⁴¹.

Outcome of implementing the module on integrated teaching could be¹⁰:

Conclusion

Time has come to modify the traditional methods of teaching. Integrated teaching approach can be introduced in undergraduate medical curriculum with appropriate sensitisation of the faculty and students. However careful and motivated deliberations need to be done in the field of medical curriculum to identify the topics which can be taught using this methodology. Implementing a well integrated curriculum

1. Short term basis a. As far as knowledge is concerned students will learn in context of medical problem integrating all the three basic sciences subjects. b. Understand and correlate basis of clinical problems/cases/diseases. c. Enhances clinical learning.

2. Long term basis a. Improved academic standards of doctors. b. Improved diagnosis and treatment. c. Provide better health care. d. Improved patients satisfaction e. Overall improved community health.

requires strong leadership and overcoming departmental barriers. It is difficult to formulate modules for integrated teaching and the process requires a thorough planning by faculty who is committed and genuinely interested in conducting the sessions. The faculty should be successful in creating sufficient interest among the students to ensure maximum student participation and make the integrated session a success.

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