

INTRODUCING INTEGRATED TEACHING IN UNDERGRADUATE MEDICAL CURRICULUM.

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Introduction : The term integration in education means coordination in the teaching learning activities to ensure harmonious functioning of the educational processes⁽¹⁾.

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 apart from teaching like research , administrative, updating their knowledge etc. In doing so, teaching undergraduate medical students frequently remains a separate academic department without integration to interrelate or unify subjects. Hence current medical education imparts knowledge in a disjointed manner and does not allow students to develop the skills to investigate, analyze and prepare to perceive the patient as a whole. Therefore, Medical Council of India desires the incorporation of integration in the medical curriculum in order to provide the students with a holistic rather than fragmented learning perspectives.⁽²⁾

Integrated thinking offers the capacity to individualize ⁽³⁾, and hence the method of integrated teaching that encouraged this concept was developed and adopted in this project

Need:

An educational program with an integrated approach has better chances of being effective. The pilot study was designed to introduce the method of vertical integration for undergraduate medical students for the first time in our medical school at MGM's Medical College, Navi Mumbai, India.

It was felt that this method will enhance the skill of clinico- pathological correlation.

Moreover, this method also helps to improve the cognitive and psychomotor domains of the students.

Objectives:

This new teaching- learning methodology(TL) was adopted for

1) Second year MBBS students in order to

- inculcate the concept of integrated teaching in undergraduate MBBS curriculum.
- To help the undergraduate students in improving the clinico pathological skills in their formative years.
- Thus to improve their diagnostic skills which will ultimately benefit the society as better clinicians and doctors will be produced.

2) For the faculty in order to :

- Motivate the staff members to implement new teaching methodology to make teaching more students centric.
- Inculcate habits in the staff members to work as a team.

Methodology:

The study was approved by Institutional Ethics Committee. Inform consent forms were administered to second MBBS (third semester) students (n=23) before exposing them to the new TL .

Integrated teaching was implemented by the active involvement of the departments of pathology and medicine. The faculty of both the departments were sensitized to this method and feedback forms from them were taken in order to evaluate their response. The students were taught the patho-physiology, laboratory diagnosis, and clinical aspects of diabetes mellitus.

Student’s perception of the new approach was collected using a pre-validated pretest and post test questionnaire and the data was analyzed using ‘student’s paired t’ test.

The same questionnaire was administered to the senior batch of second MBBS (fifth semester) students (n=23) who had undergone traditional teaching program for diabetes mellitus. This was compared with the results of post-test integrated method. The data was analyzed by applying unpaired t test.

This was followed by clinical examination of a diabetic patient and students were taught the significance of clinico pathological correlation.

Results:

Significant results [P=0.000] were obtained in the pre and post test questionnaire using integrated teaching [using Students paired t-test]. Similarly significant results [P<0.005] were obtained in the post test [integrated teaching]and traditional method.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest Score	6.21739	23	2.354040	.490851
	Post test Score	9.6304	23	1.03592	.21600

Table 1: Showing comparison between pre project and post project questionnaire.

Paired Samples Statistics		
N	Std. Deviation	Std. Error Mean
23	2.354040	.490851
23	1.03592	.21600

Table 2: Showing significant result in the post project questionnaire.

Group statistics					
	Group code	N	Mean	Std. Deviation	Std. Error Mean
Test score	Integrated post test	23	9.63	1.036	.216
	Traditional test	23	7.72	1.814	.378

Table 3: Comparison between integrated and traditional teaching methodology.

Unpaired t test						
	t	df	Sig.2-tailed	Mean diff.	Std. diff.	95% confidence Interval of diff Lower upper
Test score	4.392	44	0.000	1.913	0.436	1.035 2.791

Table 4: Shows significant result using integrated teaching method

Discussion:

The ideal basic objective of medical education in every country and institution is to educate the students regarding health, which includes physical, mental, social and possibly spiritual well-being.

The most difficult task of proper training starts after the students are admitted. The pattern of this again varies from country to country and place to place in a

country. Finally, the students are judged by examining them at every level whether they could deliver goods to the society and the country. ⁽⁴⁾

Educational program has a better chance of being effective if its purpose been clearly expressed. ⁽⁵⁾

One can give an analogy of functioning of human body, where no system functions in isolation but operates in an organized and interdependent manner to achieve optimum level of functioning.⁽¹⁾

Medical teachers should present the vast amount of information to the students in a planned, organized and integrated manner⁽¹⁾.

The need for integration is also felt by the students. Students find the preclinical subjects drab and boring. One of the main reasons is the theoretical and fragmented manner⁽⁶⁾ in which they are taught by each preclinical department at different times, without any awareness of what is taught by other departments. This disjointed approach to the topic leads to unnecessary repetition, loss of valuable time and also creates confusion in the student's mind⁽⁶⁾

The project was designed to teach diabetes mellitus to undergraduate second MBBS students in an integrated fashion. Hence, the faculty of pathology and medicine was sensitized to this new TL method and the feedback from both was analyzed.

This study has revealed that the students have improved cognitive and psychomotor domains by virtue of this new TL methodology. The students showed enthusiasm towards the new TL method and were elated to have enhanced skill of clinico pathological correlation.

Faculty feedback: Department of Pathology :-

Initially 100% faculty were enthusiastic towards this new approach but as the project progressed 30 % backed out citing sessional exams and time as constraints. 45% felt that integrated teaching could be applicable only to certain selected topics.

Department of Medicine :-

75% of faculty was agreeable to this new TL method, however, 20% backed out later on citing clinical burden and time as constraints.

The unanimous opinion from both the departments was that this methodology should be incorporated in the MBBS curriculum after more detailed deliberations.

This study helped us to develop a new format for teaching materials that enhance teacher-student and teacher-teacher interactions, reduce redundant content⁽⁶⁾ and which integrates disciplines through patient-oriented medical education.

Student feedback:

80% students were enthusiastic about the new teaching methodology & felt that they had a better clinico pathological correlation. 20% felt that a lot of time was spent on teaching of a single topic. 87% opined that this 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. Significant results were obtained both in the pre and post questionnaire involving integrated teaching as also on analyzing traditional with integrated teaching method.

Conclusion:

The new TL method of integrated teaching was found to be more effective than the traditional one.

This TL method was well accepted by faculty as well as students. Students showed better clinico pathological correlation along with improvement in cognitive and psychomotor domains.

Both students and faculty had a positive attitude toward this innovation in education.

Significant results were obtained by comparing traditional with integrated method.

This indicates that the time has come to modify the traditional methods of teaching. Integrated approach in teaching can be introduced in undergraduate medical curriculum with appropriate sensitization of the faculty and the

students. However careful and motivated deliberations need to be done in the field of medical curriculum to identify the topics which can be taught by using this methodology.

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