

Vertical Integration in a Competency Based Medical Education (CBME) Curriculum – A Feedback Analysis Study from IMBBS Students of One Medical College

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Background: The teaching program for MBBS students is carried out with a purpose to enable the medical student to give primary care to the patients. Competency Based Medical Education (CBME) is introduced in MBBS curriculum to focus on learning, which is competency based, integrated and student centered. This is done to achieve skills, ethical and humanistic values among MBBS students. Integration is a part of this new curriculum. Integration is a learning experience that allows the learner to perceive relationships from hindering blocks of knowledge and develop a broad view of the subject.

Aim & Objective: To know the impact of vertical integration class for 1 MBBS students in a Competency Based Medical Education (CBME) curriculum.

Materials and Methods: A feedback questionnaire form was given to 1 MBBS students at the end of vertical integration class. The students were explained in detail and informed consent was taken. One hundred and two (102) students from 1 MBBS (batch 2020-2021) of Government Medical College, Nalgonda, Telangana submitted the feedback forms. The results of students perception are recorded using 4 point Likerts scale and Yes/No questions. The results are analysed in descriptive tables and expressed as percentage.

Results: In our present study based on the CBME format, vertical integration helped the students in understanding the subject, guided them in attaining early clinical knowledge regarding the topic of MI (Myocardial Infarction) discussed in the class. In our present study 97.06% students found the vertical integration class to be very effective. It helped 98.04% students in attaining clinical knowledge. A total of 98.04% of students recommended vertical integration class for certain topics.

Conclusion: Vertical integration should be encouraged for certain topics by clinical speciality as it enables the students to learn better and also get early acquaintance with the clinical experience which will enable them to give better patient care.

Keywords: CBME, Vertical Integration, 1 MBBS.

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Background

The teaching program for MBBS students is carried out with a purpose to enable the medical student to give primary care to the patients. Competency Based Medical

Education (CBME) is introduced in MBBS curriculum to focus on learning, which is competency based, integrated and student centered. This is done to achieve

skills, ethical and humanistic values among MBBS students[1]. Integration is a part of this new MBBS curriculum. Integration is a learning experience that allows the learner to perceive relationships from hindering blocks of knowledge and develop a broad view of the subject. It is a teaching/learning process that occurs in each phase through study of organ systems or diseases in order to align the learning process. Integration means concepts in a topic/organ system that are similar, overlapping is merged into a single teaching session in which subject-based demarcations are removed. For the purpose topics from other phases that are brought into a particular phase. Integration must be horizontal (i.e. across disciplines in a given phase of the course) and vertical (across different phases of the course).

Shoemaker defines an integrated curriculum as “education that is organized in such a way that it cuts across subject matter lines, bringing together various aspects of the curriculum into meaningful association to focus upon broad areas of study[2]. Brauer & Fergusson describe horizontal integration as the “integration across disciplines but within a finite period

of time” usually referring to the basic sciences and Vertical integration means “integration across time”[3]. Vertical integration is defined as “a deliberate educational approach that fosters a gradual increase of learner participation in the professional community through a stepwise increase of knowledge-based engagement in practice with graduated responsibilities in patient care”. Vertical integration in medical training is a philosophy of maturation and engagement with the profession, or, as Bloom and Cruess & Cruess have formulated for identity formation, coming to think, feel and act as a physician[4], rather than merely a curricular arrangement. Study done by Singh A et al showed that vertical integration in the teaching and use of assessment tools of competency based medical education (CBME) can be helpful in improving competence among medical graduates[5]. Study done by Warkar A B et al showed that early clinical experience, in tandem with theoretical courses, can provide a framework for the beneficial and successful integration of the teaching and learning of basic sciences in a traditional program[6].

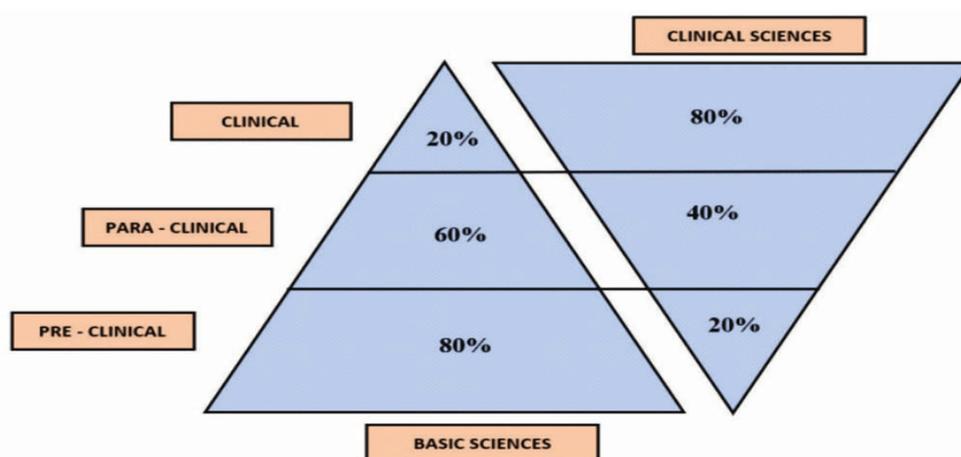


Figure 1: Shows inverted triangle model of integration in medical education^[4]

Aim and Objective

To know the impact of vertical integration class for 1 MBBS students in a Competency Based Medical Education (CBME) curriculum.

Material and Methods

The present study is a feedback analysis study from I MBBS students (batch 2020-2021) from Government Medical College, Nalgonda, Telangana. The study is done to

assess the impact of vertical integration class in a Competency Based Medical Education (CBME) curriculum. Topic of Myocardial Infarction (MI) was taught by General Medicine faculty as a part of vertical integration of Cardiovascular System Physiology to I MBBS students on 10/10/2021. A feedback questionnaire was given to students at the end of vertical integration class. The students were explained in detail regarding feedback forms and informed consent was taken from students. Total of 150 students are present in batch 2020-2021 of I MBBS. Only 102 students attended the class and submitted the feedback forms. The present

study is carried out based on the perception of 120 students. The results of students perception are recorded using 4 point Likerts scale and Yes/No questions. The results are analysed in descriptive tables and expressed as percentage.

Results

A total of 102 students (57 girls and 45 boys) from I MBBS submitted the feedback forms. Topic of Myocardial Infarction (MI) was taught as a part of vertical integration class. The results are analysed in descriptive tables and expressed as percentage.

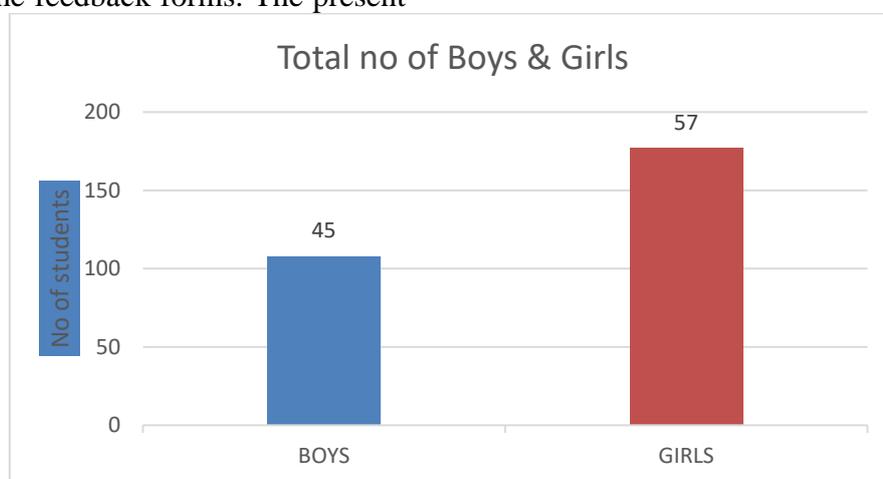


Figure 2: Shows No of boys and girls who submitted the feedback forms

The above chart (figure 2) shows 45 boys and 57 girls of I MBBS from Nalgonda medical college submitted the feedback forms.

Table 1: Students feedback on overall content and presentation of topic on MI (Myocardial Infarction) taught as a part of vertical integration class based on CBME curriculum expressed as percentage (%) n=102

Feedback	No of students	Percentage (%)
Very good	23	22.55
Good	73	71.57
Fair	05	4.90
Poor	01	0.98

Table 2: Students feedback on text and picture quality of presentation of topic on MI (Myocardial Infarction) taught as a part of vertical integration class based on CBME curriculum expressed as percentage (%) n=102

Feedback	No of students	Percentage (%)
Very good	10	9.80
Good	80	78.43

Fair	09	8.83
Poor	03	2.94

Table 3: Students feedback on vertical integration class on MI (Myocardial Infarction) helped in better understanding of the topic based on CBME curriculum expressed as percentage (%) n=102

Feedback	No of students	Percentage (%)
Very good	07	6.86
Good	83	81.37
Fair	11	10.79
Poor	01	0.98

Table 4: Students feedback on teaching format based on CBME curriculum expressed as percentage (%) n=102

Feedback	No of students	Percentage (%)
Very good	25	24.51
Good	75	73.53
Fair	02	1.96
Poor	00	0.00

Table 5: Students feedback on vertical integration class helped in attaining relevant clinical knowledge expressed as percentage (%) n=102

Feedback	No of students	Percentage (%)
Yes	100	98.04
No	02	1.96

Table 6: Students feedback on effectiveness of vertical integration class expressed as percentage (%) n=102

Feedback	No of students	Percentage (%)
Yes	99	97.06
No	03	2.94

Table 7: Students feedback on recommendation of vertical integration for certain topics in a Competency Based Medical Education (CBME) curriculum expressed as percentage (%) n=102

Feedback	No of students	Percentage (%)
Yes	100	98.04
No	02	1.96

The above tables from 1 to 7 shows feedback of students. Table 1 shows Students feedback on overall content and presentation of topic on MI (Myocardial Infarction) and Table 2 shows Students feedback on text and picture quality of presentation. Table 3 shows Students feedback on vertical integration class in better understanding of the topic. Table 4 shows Students feedback on teaching format based on CBME curriculum. Table 5 shows Students feedback on vertical integration class in attaining relevant clinical knowledge. Table 6 shows Students feedback on effectiveness of vertical integration class. Table 7 shows Students

feedback on recommendation of vertical integration for certain topics in a Competency Based Medical Education (CBME) curriculum. All the results are expressed in percentage (%).

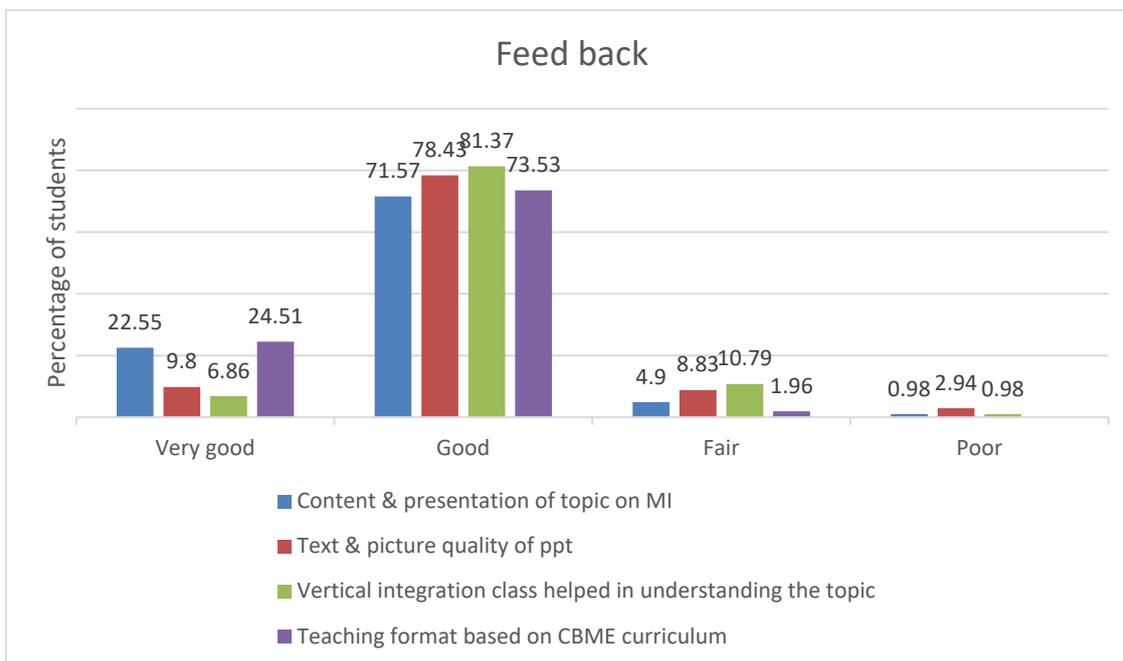


Figure 3: Shows feedback of students.

The above (figure 3) shows feedback of students regarding 4 parameters. Regarding content and presentation of topic on MI (Myocardial Infarction), 22.55% of students found it to be very good followed by 71.57% of students found it to be good and 4.90% of students found it to be fair and 0.98% of students found it to be poor. Regarding text and picture quality of presentation of topic on MI (Myocardial Infarction), 9.80% of students found it to be very good followed by 78.43% of students found it to be good and 8.83% of students found it to be fair and 2.94% of students found it to be poor.

Regarding feedback on vertical integration class helped the in understanding the topic better, 6.86% of students found it to be very good followed by 81.37% of students found it to be good and 10.79% of students found it to be fair and 0.98% of students found it to be poor.

Regarding teaching format based on CBME curriculum, 24.51% of students found it to be very good followed by 73.53% of students found it to be good and 1.96% of students found it to be fair and 0.00% of students found it to be poor.

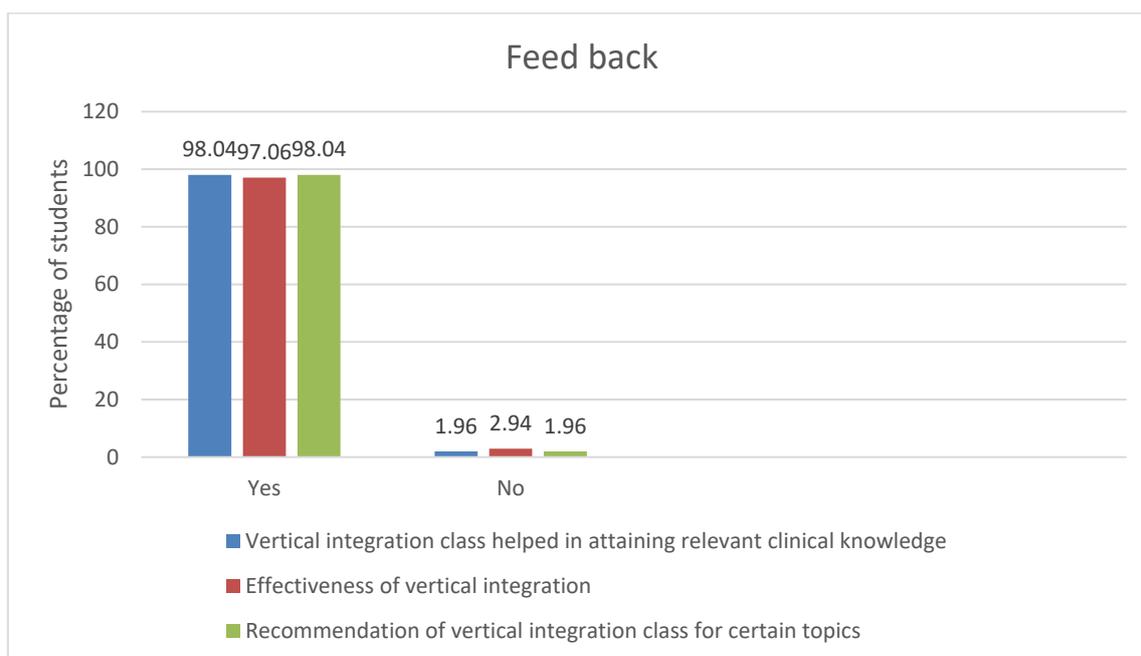


Figure 4: Shows feedback of students.

The above (figure 4) shows feedback of students regarding 3 parameters. Regarding attaining relevant clinical knowledge, vertical integration helped 98.04% students in attaining relevant clinical knowledge and 1.96% of students gave negative feedback.

Regarding the effectiveness of vertical integration, total 97.06% students found the vertical integration class was very effective and 2.94% of students gave negative feedback.

Regarding recommendation of vertical integration for certain topics, total 98.04% recommended that they needed vertical integration classes for better understanding of subject and 1.96% of students gave negative feedback.

Discussion

The present study is a feedback analysis study from I MBBS students which was done to know the impact of vertical integration class taught in CBME curriculum.

Study done by N. Rajya Lakshmi et al concluded that implementation of programs like early clinical exposure and integration of the subjects can make learning basic science subjects more

interesting and can affect the students attitude towards patient care when compared to traditional teaching for medical students[7].

Studies done by Bligh J et al, Custers EJFM et al, Lazic E et al and Norman G et al state that to make competent clinical decisions based on sound scientific principles, the medical students must be able to retain knowledge from the preclinical phase of their medical course[8,9,10,11].

Study done by Kate et al showed integrated teaching in second-year medical students helps in better clinicopathological correlation along with improvement in cognitive and psychomotor domain[12].

Studies done by researchers such as Dandannavar et al[13], Kadam and Sane et al[14], Soudarssanane and Sahai et al[15], Kumari et al[16], Mahajan et al[17], Rehman et al[18] and Deepti and Shashikala et al[19] concluded that students following integrated curriculum were satisfied with their course and made learning easy and fruitful by correlating theoretical virtual physiological application more realistic by linking it with clinical approach.

Study done by Kalpana kumari et al[20] concluded that students recognized that integrating the medical subjects was useful and of interest to them, and that they should be continued.

In our present study the students gave positive feedback regarding the vertical integration class. In our present study about 97.06% students found the vertical integration class to be very effective. It helped 98.04% students in attaining clinical knowledge. A total of 98.04% of students recommended vertical integration class for certain topics. From our present study based on the CBME format, vertical integration helped the students in understanding the subject, guided them in attaining early clinical knowledge regarding the topic of MI (Myocardial Infarction) discussed in the class[21,22].

Conclusion

Vertical integration of certain topics by clinical speciality which is introduced as a part of CBME curriculum is necessary. Learning of basic sciences with respect to a clinical context helps to improve students motivation to learn and also improve retention.

Hence based on our present feedback analysis from I MBBS students, vertical integration for certain topics with clinical specialities is very helpful for better understanding of subject and also for early immersion into the clinical environment. This also helps the students to give better primary care to the patients.

Limitations and directions for future improvisation and research.

All the 150 students of the batch 2020-2021 did not attend the vertical integration class. Only 102 students attended the class and submitted the feedback forms. We could not study the perception of absentees. Similar feedback studies about vertical integration for I MBBS and II MBBS students should be carried out so as to encourage vertical integration classes

for certain speciality topics in all medical colleges.

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