



MEDICAL EDUCATION

EVALUATION OF ON GOING INTEGRATED TEACHING PROGRAM AMONG UNDERGRADUATE MEDICAL STUDENTS

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ABSTRACT **Introduction:** 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 topic as a whole. 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 better assimilate the knowledge. Ultimately this will impart the basic knowledge of the topic for better understanding of the various aspects of the diseases which will create better doctors in society who will provide good health care services for community needs. Thus to improve effective diagnosis and better treatment of the patients and to improve the quality of student's learning, integrated learning is the need of an hour. **Material and Method:** Integrated teaching programme is being conducted in our institution from last one year. To evaluate the perception of faculty and students this project was initiated. Perception of faculty and students on acceptability and usefulness of integrated teaching was taken on structured feedback questionnaire based on 5 point Likert scale and data was statically analyzed. **Results:** Integrated teaching was well accepted by students and faculty, they had a positive attitude towards this innovation teaching. **Conclusions:** Integrated teaching led to improvement in student motivation, satisfaction, and engagement. A majority of students and faculty accepted that Integrated teaching was an effective learning and teaching method and supported the incorporation of Integrated teaching into routine curriculum.

KEYWORDS : Integrated teaching, Sensitize, Physiology, Feedback

Introduction

Various Teaching Learning (TL) methods are in vogue in medical schools, all over the globe to ensure holistic rather than a fragmented approach in an attempt to promote evocative and meaningful learning¹. An interdisciplinary curriculum refers to 'a curriculum organization which cuts across subject matter lines to focus upon comprehensive life problems or broad based areas of study that brings together the various segments of the curriculum into meaningful association'².

Medical curriculum is very extensive and students are expected to learn many subjects at the same time. Current medical education system provides knowledge to the students in an unbalanced and disproportionate manner. Students absorb information passively rather than actively. Students do not develop critical thinking, problem solving and decision making skills. Students will not develop the sufficient skills to investigate, diagnose, and treat the patient as a whole.

MCI has structured the innovative new curriculum, *Integration: Horizontal and Vertical*, to overcome this problem³. The word "Integrate" is derived from Latin root "integrate" meaning "make whole", means to form, to coordinate, blend into a functioning or "unified whole" (Guilbert 1987). 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 departments⁴. It means bridging connections between academic knowledge and practicals.

In another definition, the term integration in education means coordination in the teaching learning activities to ensure harmonious functioning of the educational processes⁵. Teachers assume new role of facilitating the process of active learning rather than overloading students with excessive details through a series of elaborate lecture and voluminous book.

This way of learning that is, student centered approach is expected to make learning a pleasure and subsequent use of knowledge base in an effective manner in clinical practice. 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. Integrated teaching offers several advantages.

Basic sciences are simplified without needless details and taught along with clinical disciplines. Learning is abbreviated without repetition in different subjects giving a composite picture with simultaneous clinical demonstration.

At present, integration is done only in the students' mind at widely dispersed dates and is not effective. To improve diagnosis and better treatment of patients and to improve quality of students learning, integrated teaching is the need of the hour⁶.

AIM: To assess acceptance of student about ongoing integrated teaching programme. Students will be able to correlate basic subjects with its clinical content.

OBJECTIVES:

- 1 To assess perception of faculty regarding integrated ongoing teaching programme through feedback questionnaire.
- 2 To assess the perception of the students in acceptance of Integrated teaching through feedback questionnaire.

Material and Method

Study was conducted among MBBS students of MAMC Agroha in department of physiology. The study was planned in detail in a departmental meeting with the head and whole faculty. The faculty was sensitized to the concept of integrated learning. Subsequently, the faculty was made aware about the proposed intervention in the teaching method of students. Project was shared and discussed with all HODs of concern department.

Many meetings were organised to finalize the curriculum, time table and plan to execute the lectures. The students were also sensitized about the method and the topics. The topics which were covered during different integrated teaching sessions were Hypertension, Anaemia, Tuberculosis etc. Faculty of different departments participated in this

teaching programme. The feedback questionnaires for students and faculty were developed and validated. They were exposed to integrated lecture modules. In order to know whether medical teachers have been successful to present the vast amount of information to the students in a planned, organized and integrated manner the feedback evaluation and comments of students were gathered by a questionnaire. The student feedback questionnaire (Annexure 1) consisted of 10 questions on 5-point Likert scale (1-Strongly disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly agree). The questions were framed in such a way that yielded information regarding the usefulness of didactic lectures and Integrated teaching classes and the context of understanding. The questionnaire had items related to teaching, benefits experienced due to teaching learning method and its significance. Face and content validity of the questionnaire was checked by experts in medical education research of the Institution.

The faculty feedback questionnaire was prepared to know about their experiences and opinion about the new method. The questionnaire had 5 questions on the 5-point Likert scale.

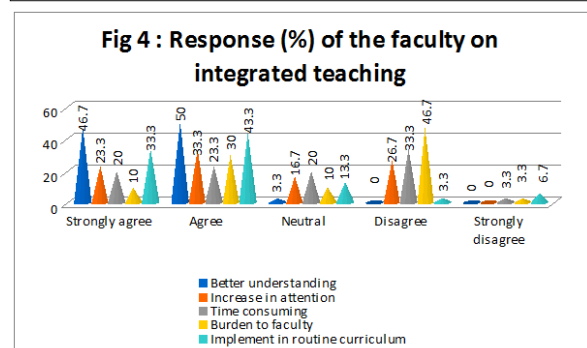
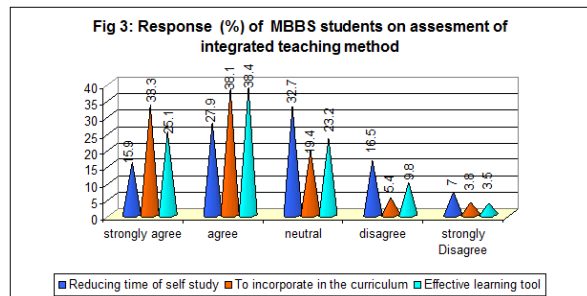
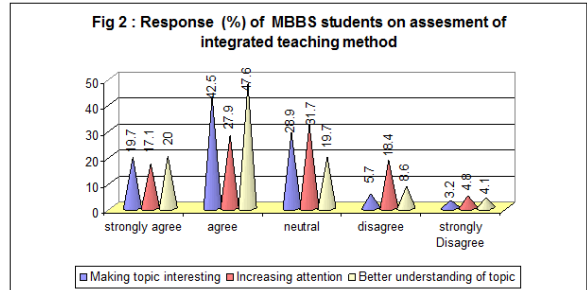
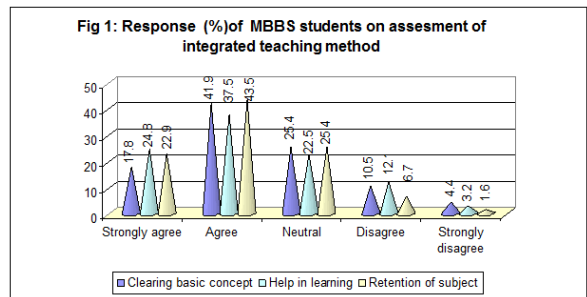
The feedback questionnaire from both students and faculty was taken and assessed.

The data collected from the students as well as faculty was analyzed with the help of Likert scale and expressed in terms of percentage.

Results

A total of 321 students of MBBS participated in the study. Feed back was obtained by all the students and faculty in a form of questionnaire and following results were obtained.

- I. 41.9% students agreed that integrated teaching helped in clearing their basic concept, 17.8% strongly agreed 25.4% were neutral, 10.5% disagreed and 4.4% strongly disagreed to this concept. (Fig 1)
- II. 37.5% agreed that integrated teaching helped them in learning, 24.8% strongly agreed 22.5% were neutral, 12.1% disagreed, whereas 3.2% of respondents strongly disagreed to this question. (Fig 1)
- III. 43.5% students agreed to the benefit of integrated teaching in retention of subject, 22.9% strongly agreed, 25.4% were neutral, 6.7% disagreed and 1.6% strongly disagreed to this question. (Fig 1)
- IV. 42.5% agreed that integrated teaching made the topic interesting, 19.7%strongly agreed, 28.9% were neutral,5.7% disagreed and 3.2%strongly disagreed to this question. (Fig 2)
- V. 27.9% of students were more attentive in class, 31.7%were neutral, 18.4%disagreed, 17.1%strongly agreed and 4.8% were strongly disagreed to this point. (Fig 2)
- VI. 47.6%students agreed that integrated teaching helped in better understanding of topic, 20% strongly agreed whereas 8.6% disagreed to this statement. (Fig 2)
- VII.32.7% were neutral,27.9% agreed , 15.9% strongly agreed that integrated teaching helped in reduction of time of self study, whereas 16.5% and 7% of students disagreed to this statement. (Fig 3)
- VIII.33.3% strongly agreed and 38.1% agreed for implementation of integrated teaching in curriculum, 19.4% were neutral and only 5.4% disagreed at this point. (Fig 3)
- IX. 38.4% students agreed that integrated teaching is effective learning tool, 25.1% strongly agreed,23.2% were neutral whereas 9.8 disagreed to this statement. (Fig 3)
- X. Total feedback was taken from 30 faculty from different departments who participated in integrated teaching programme. Their response was calculated in percentages. 46.7% faculty strongly agreed and 50% agreed that integrated teaching helped in better understanding of topic.33.3% agreed that their was increase in attention of students in class whereas 46.7% disagreed at this point. 33.3% faculty disagreed that integrated teaching is more time consuming and 20% of them were neutral. More over 30% of faculty agreed integrated teaching as an extra burden to them where as 46.7% of them disagreed. 43.3% of faculty wants and 33.3 % are in strong favor that integrated teaching should be implemented in routine curriculum. (Fig 4)
- XI. One of the suggestion given by faculty was that in first year MBBS, integrated teaching should be horizontal pattern as it is more beneficial than vertical integration. (Fig 4)



Discussion

Providing vast information to the medical students in a planned, organized and integrated manner is the duty of the medical teachers, so that they get a better understanding of integration in the human body that no system functions in isolation but operates in an organized and interdependent manner to achieve optimum level of functioning. There are many advances in scientific knowledge with each year passing by.

The innovative changes in medical education and growing minds of MBBS students. This necessitates constant school curriculum. These include self-directed learning, problem-based learning, IT and community orientation.⁷ The present system of education follows a building block principle where each subject has its own frame, restricted to one part of the course.

Curriculum integration has evolved as an important strategy in medical education. For an efficient integrated teaching programme, it's important to plan for theme of topic, sequencing of topics and contents of each topic.

To accomplish this, teachers participating in integrated teaching programme have to organize, plan, discuss with interdepartmental members and do a pre assembly workup. These pre assembly activities require time and dedication on the part of teachers and subject experts to achieve good results⁸.

Present study aimed at evaluating the ongoing integrated teaching program among medical students.

Feedbacks from student revealed that integrated teaching was more interactive, had better understanding, more useful, more interesting, appropriate imparting of knowledge and skill were significantly accepted. Similar finding was found by Azadeh Roohlamini et. al.¹⁰

Our faculty admitted that the whole experience was very motivating and it has improved their knowledge about newer teaching-learning methods. The faculty feedback was positive and wanted to incorporate integrated teaching for other important topics and combine it with traditional method.

It was found that integrated method was well accepted by all faculty who participated in the project from respective departments, similar findings were found in study conducted by Rehana Rehman et. al.¹¹

It happened because in integrated teaching we took extra hours for completion of topics in planned time schedule. While in Conventional teaching teachers know that they have one hour to finish his/her topic.

The result of this study showed that integrated teaching is effective for better understanding of subject and improvement in learning which is also documented by Renu et al.⁹ Integration cannot be done by individual subjects. MCI has also recognized the need for integration. Integrated teaching can succeed only through an official institutional policy.

Limitations:

The limitations were lack of cooperation from few departments, additional burden to some faculty, lack of expert facilitators, ignorance of few faculty members.

CONCLUSIONS

- 1) Integrated teaching should be incorporated into our medical curriculum as a part of regular TL method. Combination of both methods didactic lectures and integrated teaching learning would be an effective educational tool.
- 2) Positive perceptions of students and faculty indicate the successful introduction of integrated teaching in our college. Change was well accepted by faculty and students. So we can say that time has come to introduce integrated teaching in all colleges to further justify implementation of this technique in courses that are delivered to large undergraduate classes.

IMPLICATIONS

Integrated teaching should be incorporated into our medical curriculum as a part of regular T/L method. A mixture of both didactic lectures and integrated teaching should be used for teaching as more applicable and closer to clinical science.

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REFERENCES

1. Khan KS, Coomarasamy A. A hierarchy of effective teaching and learning to acquire competence in evidenced-based medicine. *BMC Med Edu* 2006;6 doi: 10.1186/1472-6920-6-59.
2. Good C, (Ed.), Dictionary of Education, 3rd Edition. New York: McGrawHill, 1973
3. Medical Council of India. Vision 2015. Available at: www.mciindia.org/tools/announcement/MCI_booklet.pdf (last accessed on August 9, 2015)
4. Joglekar S, Bhuiyan PS, Kishore S. Integrated teaching – our experience. *J Post grad Med* 1994; 40(4): 231
5. Bhuiyan PS, Rege NN, Supe AN. The art of teaching medical students. 2nd ed. Mumbai: Medical Education Technology Cell, Seth G.S. Medical College and K.E.M. Hospital. 2002. pp. 305–12
6. Khullar Shilpa. INTEGRATED TEACHING IN MEDICAL EDUCATION IN INDIA. *Int. J Basic Appl. Physiol.*, 5(1), 2016
7. Smith, S. R. (2005). Toward an Integrated Medical curriculum. *Med Health R I*, 88(8): 258-61
8. Dandannavar VS. Effect of integrated teaching versus conventional lecturing on MBBS Phase I students. *Recent Research in Science and Technology* 2010; 2: 40-8
9. Lohitashwa R, Narendra S S, Mufti M. Evaluation of impact of Integrated Teaching over Didactic lecture on student learning. *J Educational Res & Med Teach* 2014; 2(2): 14-6.
10. Rooholamini, A., Amini, M., Bazrafkan, L., Dehghani, M. R., Esmailzadeh, Z., Nabeiei, P., Rezaee, R., & Kojuri, J. (2017). Program evaluation of an Integrated Basic Science Medical Curriculum in Shiraz Medical School, Using CIPP Evaluation Model. *Journal of advances in medical education & professionalism*, 5(3), 148–154.
11. Rehman, Rehana & Syed, Sadiqa & Kamran, Ambreen. (2011). EVALUATION OF INTEGRATED LEARNING PROGRAM OF UNDERGRADUATE MEDICAL STUDENTS. *Journal of Pakistan Pakistan Physiological Society*. 7(2).