Volume : 3 | Issue : 9 | September 2014 • ISSN No 2277 - 8179

Research Paper

An appraisal of topic based integrated learning program in 1st MBBS students of Ashwini Rural Medical College.

Medical Science

KEYWORDS : Integrated Learning Program, Topic based learning module, Physiology, Solapur

Dr. Prafull Kamble	Associate Professor, Department of Physiology, Ashwini Rural Medical College, Hospital & Research Center, Solapur.
Dr. Vandana Kamble	Assistant Professor, Department of Physiology, Ashwini Rural Medical College, Hospital & Research Center, Solapur.
Dr. Anjali Gosavi	Prof & Head, Department of Anatomy, Ashwini Rural Medical College, Hospital & Research Center, Solapur.

ABSTRACT

Anatomy and Physiology are considered to be the core subject as far as basic medical sciences for medical undergraduates is concerned. A multi-disciplinary integration was established and a topic-based leaning module was introduced and conducted for the first time in our institution, Ashwini Rural Medical College, Hospital & Research Center (ARMCH&RC), Solapur. Our study was designed to introduce horizontal integration for 1st MBBS students onto a topic of "Pancreas" which was planned, integrated and conducted in our institution by the Departments of Anatomy and Physiology. A pre-ILP and post-ILP MCQ exam was conducted, to assess the effectiveness of the new integrated learning program. Students' feedback was collected and analyzed. 92% of students agree that integrated to be more interesting, 78% agree integrated lectures to be less confusing, 94% agree that integrated lectures help them to understand the topic better than traditional teaching and 91% agree that integrated lectures help them in answering questions in their exams. 79% have agreed to implement current practice of integration. Thus an integrated learning program is feasible within a conventional medical curriculum of an Indian medical college.

Introduction:

The need for having a formal education in teaching methodology for teachers has long been established. Teaching is a process which results in learning. Learning is a relatively permanent or long lasting change in the behavior of the learner because of gain in knowledge or experience (1). Dugan Laird once quoted "Learning is a journey and not a destination". There have been a plenty of changes in the medical profession regarding learning. It has become more and more dynamic and demanding. Physiology as a basic science subject in medicine is progressing by leaps and bounds. The teacher has to allocate priorities, economize the energy and channelizes the output. Also teaching time in basic science has been reduced to 1 year. This thus places enormous strain on students as well as teachers(1). Integration in education thus means co-ordination in the teaching learning activities to ensure harmonious functioning of educational processes (2). Medical Council of India also desires the incorporation of integration in the medical curriculum in order to provide the students with holistic rather than compartmentalized learning(3). It is generally agreed that reviewing the teaching and evaluation methods at regular intervals and modifications of methodologies is a must for improvement in undergraduate medical teaching (4).

Context of the study:

Anatomy and Physiology are considered to be the core subject as far as basic medical sciences for medical undergraduates is concerned. Students' learning these subjects imbibes and forms their learning experiences as a base for their future education. Integration of learning, as described by Ronald Harden (5), is achieved through 11 steps, out of which multi-disciplinary integration was established and a comprehensive learning by integrated method was developed. As integrated teaching is best accomplished by using learning modules, here in our study we have utilized a topic-based learning module and also we have put an emphasis on horizontal integration within Departments of Anatomy and Physiology. This study was designed to introduce mode of horizontal integration for undergraduate medical students for the first time in our institution, Ashwini Rural Medical College, Hospital & Research Center (ARMCH&RC), Solapur. The topic so chosen for our study was of "Pancreas" which was planned, integrated and conducted in our institution by the Departments of Anatomy and Physiology.

Aims & Objectives:

- To evaluate the effectiveness of integration in teaching learning methods,
- To assess feedback forms of students regarding integrated teaching learning method.

Materials and methods:

Our study is a pilot study conducted in ARMCH&RC, Solapur. The study was conducted in 100 First MBBS students, who participated actively and voluntarily. Prior informed consent of students and necessary approvals for the study were obtained. It was explained to the students that this study will not have an effect onto internal assessment marks of each student. Integrated teaching was implemented on selected topic with active involvement of facilitators from Departments of Anatomy & Physiology and students. A didactic lecture with integrated teaching session was conducted in between pre and posts MCQ's (multiple choice questions) tests with use of AV-aids. Thus pre and post evaluation of students for the effective of understanding of the topic was done using MCQs' exam. Students' feedback by means of students' feedback form, was obtained to evaluate their responses to perception of learning and co-relating a topic. Data from MCQ test scores and students' feedback form was analyzed statistically.

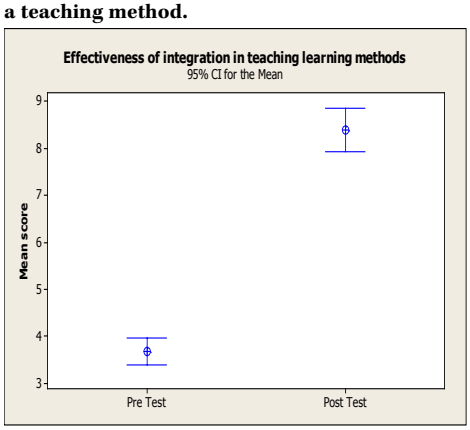
Statistical Analysis: Data was expressed in terms of mean, standard deviation and proportion. Data was analyzed by normality test, by means of Kolmogorov and Smirnov (KS) test. Comparison between pre and post test score was done using paired t test for normal distribution and Wilcoxon matched pair test for non-normal distribution. A p-value less than 0.05 were considered as significant and 0.01 as highly significant.

Results: Table no. 1:

Score	Mean	SD	Mean difference	95 % of difference	p-value	Remarks
Pre-ILP	3.68	1.39	4.71	4.31 – 5.11	P<0.0001	Highly Significant
Post-ILP	8.39	2.31				

Volume : 3 | Issue : 9 | September 2014 • ISSN No 2277 - 8179

Effectiveness of use of Integrated Learning Program (ILP) as a teaching method.

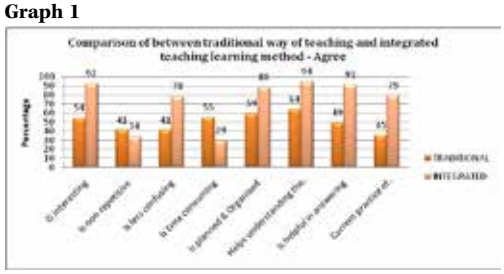


As the data failed the normality test, so we have used non-parametric test Wilcoxon matched pair test. Wilcoxon matched pair test test was done to determine the significance of difference between the knowledge score before and after implementation of integration in teaching learning methods. The result indicated statistically significant difference between the before and after knowledge score on integration in teaching learning methods. (P<0.0001) which indicates improvement in knowledge score after implementation of integration in teaching learning method. In turn, it shows that effectiveness of ILP.

Students' feedback:

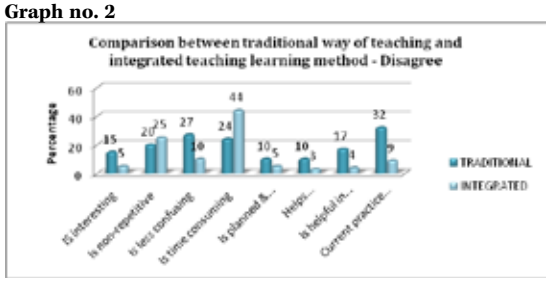
Students' feedback forms were collected. This form had a comparison between traditional teaching method and integrated teaching learning method. These two methods were then compared onto following points like, whether traditional is more interesting or integrated is more interesting while teaching a particular topic. Likewise there were eight different points wherein students were asked to tick a particular option whether they agree, disagree or are undecided about their opinion regarding.

Graph 1



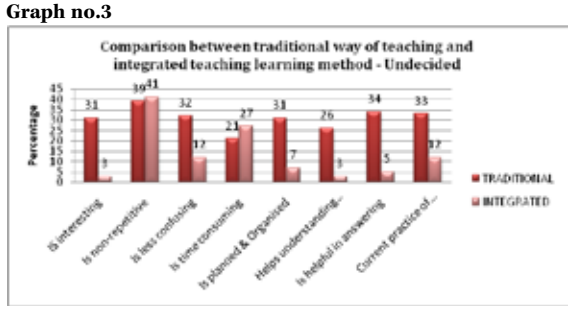
Graph no.1 shows 92% of students agree that integrated to be more interesting, 78% agree integrated lectures to be less confusing, 94% agree that integrated lectures help them to understand the topic better than traditional teaching and 91% agree that integrated lectures help them in answering questions in their exams. It is less time consuming (29%) as compared to traditional (55%). 79% have agreed to implement current practice of integration.

Graph no. 2



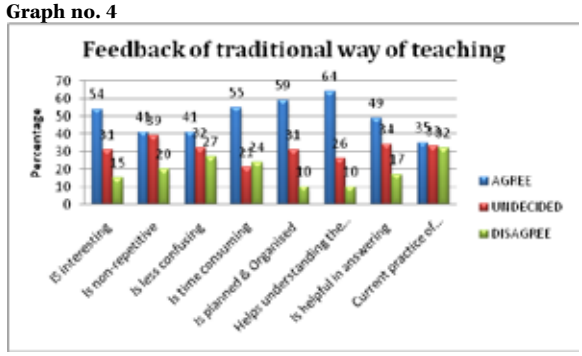
Graph no. 2 shows 44% of students do not agree that integrated teaching program is time consuming.

Graph no.3



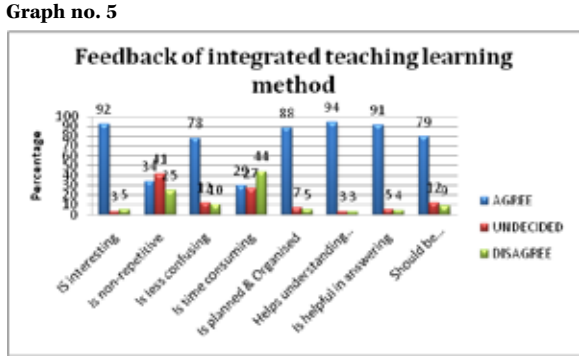
Graph no.3 shows considerable numbers of students were undecided about there were any repetition in topic when compared traditional teaching method with that of integrated teaching learning method.

Graph no. 4



Graph no.4 shows overall feedback of all students whether they agree, disagree or are undecided about traditional ways of teaching. In this we observe that, approximately 50-60% students agree to traditional way of teaching to be less time consuming, less confusing, interesting.

Graph no. 5



Graph no. 5 shows feedback of students regarding integrated teaching learning methods. In this graph we observe, 79-94% of students in agreement with integrated lecture being more interesting, less confusing, more planned & organized, helps students understand the topic well, helps them write answers in examinations and feel that integrated learning programs should be implemented in routine curriculum.

Discussion:

Anatomy and Physiology are important subjects of preclinical sciences. As these are vast subjects to be covered in span of 1year, students felt the need that these subjects be made more interesting. This project was thus taken up as pilot study where in a topic based integration was designed and conducted in ARMCH&RC, Solapur. It thus showed a novel approach to students wherein there was topic based horizontal integration in-

volving Dept. of Anatomy & Physiology. This newer method of teaching was found to be more interesting for students. In our study, there was a statistically significant difference in the perception and reciprocation of understanding of the topic by students in the form of better scores in post-test results obtained. This thus showed a significant effectiveness of integrated teaching learning program. This is seen in concurrence with Lalita et al, where there were MCQ and SAQ exams used as tools to establish an inter-group comparison[6] amongst study groups of integrated teaching and traditional teaching. While analyzing the student's feedback forms, we received 80-95% of students agreeing to the integrated teaching learning program. In all students were excited to be a part of a novel learning experience, which helped them understand, co-relate a topic in a more planned and organized manner. Feedback is life blood of learning experience [4]. This feedback thus helps us plan and improve upon our teaching learning methods. This is also in concurrence with Hem Lata et al & Kate et al, where they have utilized feedback for evaluation techniques from students as well as teachers. This study thus reveals that the students have improved cognitive and psychomotor domains by virtue of this new teaching learning method. In turn this suggests that the time has come to assess and modify the traditional methods of teaching[7].

Conclusion:

Integrated teaching learning method was more effective than traditional teaching method. Better effectiveness in tests scores was achieved. Students agreed that integrated teaching is more interesting, less confusing, more planned & organized, helps students understand the topic well, helps them write answers in examinations and feel that integrated learning programs should be implemented in routine curriculum. Thus an integrated learning program is feasible within a conventional medical curriculum of an Indian medical college[8].

- **Learning experiences:**

✓ Planning, discussion and co-ordination in between the concerned departments should be done before actual conduction of the integrated teaching session.

✓ Keeping up the support and enthusiasm from students throughout the lecture and implementation of integrating schedule is necessary.

✓ There should be an encouragement to staff / teachers to work in integrated manner or work as team

✓ Lastly, a learning experience to remember lifelong learnt under able guidance of Dr. Payal Bansal Madam and her team of teachers'.

REFERENCE

1. An introduction to medical education, Col.PJ Vincent, Col. TP Madhusudanan; Dept of Medical education, AFMC, Pune; 91-104. | 2. Implementation of Integrated Learning Program in neurosciences during first year of traditional medical course: perception of students and faculty. Ghosh S, Pandya HV. BMC Med Educ. 2008 Sep 24;8:44. doi: 10.1186/1472-6920-8-44. | 3. Medical Council of India – Vision 2105. MCI, Dwarka, New Delhi, March 2011;9-25. | 4. Student feedback on teaching and evaluation methodology in physiology, Hem Lata, Vidushi Gupta; South east asian journal of medical education; Vol.2, no.1, 2008; 31-37. | 5. The integration ladder: a tool for curriculum planning and evaluation; Ronald Harden; Medical education,2000; 34:551-557. | 6. Introduction of horizontal integration and comparison with traditional teaching methods in physiology: Lalita Nikam, Sneha Chopade; International journal of basic medical sciences; Dec 2102, Vol:3, Issue:5, 143-146. | 7. Introducing integrated teaching in undergraduate medical curriculum, Dr. Madhuri Kate et al; International journal of pharma sciences and research, Vol.1(1), 2010, 18-22. | 8. An effective integrated learning programme in the first year of the medical course. Vyas R, Jacob M, Faith M, Isaac B, Rabi S, Sathishkumar S, Selvakumar D, Ganesh A; Natl Med J India. 2008 Jan-Feb;21(1):21-6. |