

(2) INTEGRATED TEACHING - TOOL FOR REFORMATION OF CURRICULUM

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Introduction

Traditional teaching learning methods follow 'Discipline Wise Model'. This leads to unnecessary repetition, disjointed approach to teaching, and confusion in student's mind due to difference of opinion leading to improper grasping of the subject. This discourages students from learning & they get disinterested in applying knowledge achieved into practice.

Hence, the integrated teaching is need of today's medical education. So we conducted the study to compare scientific method for teaching and also obtained student's perspective.

Aims

To analyze student's feedback after introduction to new teaching-learning method, to make them learn to integrate the knowledge across the disciplines, to analyze the impact of integrated teaching over student, to improve the student's interest.

Materials & Method

48 students of 5th semester were involved in the study. After going through the Maharashtra University syllabus of Pathology & Physiology, two overlapping topics were selected. The students were divided into two symmetrical groups (A & B). For first topic, group A was given traditional & group B was given integrated lecture. Reverse was done for second topic. Both the traditional lectures were taken with OHP whereas the integrated lectures were taken with LCD presentation. Data from Pre- & Post-tests with prevalidated MCQs & the student's feedback with prevalidated questionnaire containing both close & open ended questions were statistically analyzed using 't' test (paired, unpaired) & Z test.

Result & Analysis

The statistical value for pre- & post-test of traditional & integrated lecture was 6.704 & 8.100 respectively. The statistical values for post-test 1 & post-test 2 of traditional & integrated lecture were found to be 0.756 & 0.332 respectively. 87.5% students thought that integrated lecture is more effective than traditional & 12.5% thought vice versa. 37 students felt that LCD is better than OHP. 20.83% students found that it is easy to write notes in traditional lectures & is less time consuming & 66.67% students felt that they were monotonous, boring & sedative. 95.83% students wanted more integrated lecture. 22 students felt that it is more effective & explanatory, supportive in 3rd year with more animations & pictorial presentation.

Discussion

Students found the integrated learning programme to be a useful, feasible method of learning. However, the statistical comparison between the evaluation after integrated & traditional lectures had not shown significant impact of integrated lectures. But the statistics reveal certainly that students felt the need for integration.

This study was an attempt to improve the quality of medical education with the innovative curricular strategy. The lacunae of the study were the small sample size & long-term impact. The integrated teaching would surely reduce the fragmentation of medical course; prevent repetition, waste of time & rationalization of teaching resources. It will also promote the interdepartmental collaboration & students will learn to apply their knowledge to clinical practice.

Introduction

In today's medical education methods, we learn all about human body in various departments as separate compartments related to the body. But even the human body works in a very well coordinated, integrated fashion to achieve the homeostasis. Medical education cannot be categorised at different levels. Many topics in basic sciences are taught to medical students in 'Discipline Wise Model' i.e. compartmentalization. This leads to unnecessary repetition, disjointed approach to teaching, and confusion in student's mind due to difference of opinion leading to improper grasping of the subject. This discourages students from learning & they get disinterested in applying knowledge achieved into practice.

As the medical education is related with the community services, we need to teach our students to correlate the various subjects to create good doctors. Teaching the same topic in sequence from the different faculty members will better assimilate the knowledge. This will impart the basic knowledge of the topic for better understanding of the various aspects of the diseases, its progress & management.

Traditional teaching-learning methods are mainly didactic & passive. Hence, the integrated teaching is need of today's medical education to create better doctors in society who will provide good health care services to community needs. So we wanted to compare scientific methods for teaching and also obtained students' perspective.

Aims & Objectives

1. To analyze student's feedback after introduction to new teaching-learning method.
2. To make them learn to integrate the knowledge across the disciplines.
3. To analyze the impact of integrated teaching over student.
4. To improve the student's interest.

Abbreviations used:

- OHP – Overhead Projector
- LCD – Multimedia Projector
- IL – Integrated Lecture
- TL – Traditional Lecture

Materials & Method

This cross sectional study was conducted in department of Pathology in collaboration with the department of Physiology, Rajiv Gandhi Medical College, Kalwa. Before proceeding for the study, the plan of the study was submitted to the local 'Ethical Committee' & was approved. The study was explained to the subject & consent was taken.

Study Area: This study was restricted to the students studying in the same college.

Study Design: Cross sectional study

Study Population: It comprised V semester medical students studying in the same medical college.

Data Source: Roll call register

Tools of Data: Planned questionnaire, pre- & post-test marks

Sample size: 48

Statistical Tests: 't' test (paired, unpaired)

Z test

Procedure:

The study was conducted in the Department of Pathology, Rajiv Gandhi Medical College, Kalwa. We went through the Maharashtra University syllabus of Pathology & Physiology and identified the areas of overlap between the two subjects. Out of these areas, Jaundice with Liver function test & Diabetes Mellitus were chosen. The project was explained to the students & they were motivated to participate in it. The students were divided into two equal groups, Group A & Group B. For first topic (Jaundice & Liver function test), group A was given traditional & group B was given integrated lecture. Reverse was done for second topic (Diabetes Mellitus). Both the traditional lectures were taken with OHP whereas the integrated lectures were taken with LCD presentation. In both the cases, pre-test & post-test were given with prevalidated MCQ's. Also, the student's feedback was taken by giving them prevalidated questionnaire containing both close & open-ended questions. Students were told not to reveal their identity to make this exercise honest & free from bias.

Result & Analysis

For the comparison between pre-test & post-test of both lecture topics, the 't' test (paired) was used. The statistical value for traditional was found to be 6.704 & for integrated lecture was found to be 8.100. Both the values were highly significant.

For the comparison between post-test of integrated & traditional lecture 't' test (unpaired) was used. The statistical values for post-test 1 & post-test 2 were found to be 0.756 & 0.332 respectively. These values were non-significant.

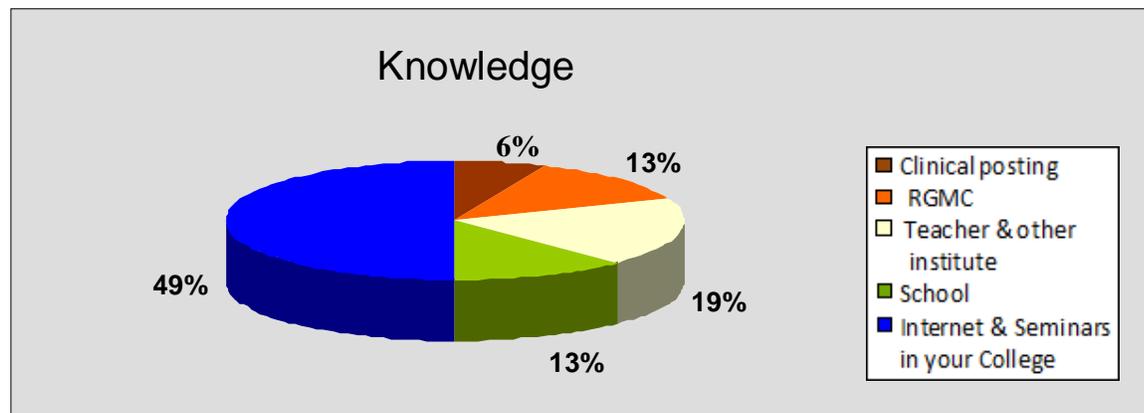
The following table shows the mean, mean \pm 1.96 standard deviation and mean \pm 1.96 standard error for both the pre-test & post-test of traditional & integrated lectures:

Factors	Mean	Mean \pm 1.96SD	Mean \pm 1.96SE
PRETEST 1(TL)	12.05	6.49 - 17.61	10.83 - 13.26
PRETEST 1(IL)	13	6.24 - 19.76	11.52 - 14.48
POSTTEST 1(TL)	18	14.25 - 21.75	17.14 - 18.86
POSTTEST1(IL)	18.71	11.78 - 25.63	17.03 - 20.38
PRETEST2 (TL)	19.11	13.36 - 24.86	17.19 - 21.03
PRETEST2 (IL)	18.2	12.67 - 23.73	16.45 - 19.95
POSTTEST2 (TL)	24.67	21.89 - 27.49	23.74 - 25.59
POSTEST 2 (IL)	24.25	17.48 - 31.02	21.86 - 26.64

Questions in the student's feedback questionnaire were analyzed statistically by using 't' test (paired, unpaired) & 'Z' test.

1. Previous knowledge of integrated teaching methodology –

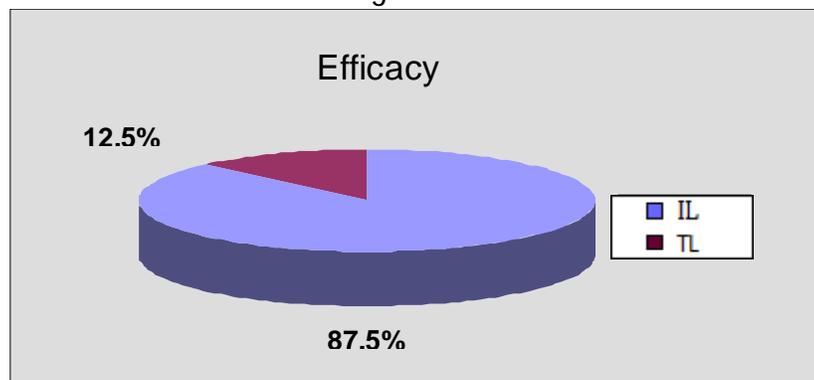
40% students were unaware of integrated teaching methods whereas 60% students had heard about integrated teaching.



The above pie diagram shows the % of different sources. 49% students heard about it from Internet, seminars in college & teachers from other institute were significant. Other sources like clinical posting, school, in same institute were insignificant.

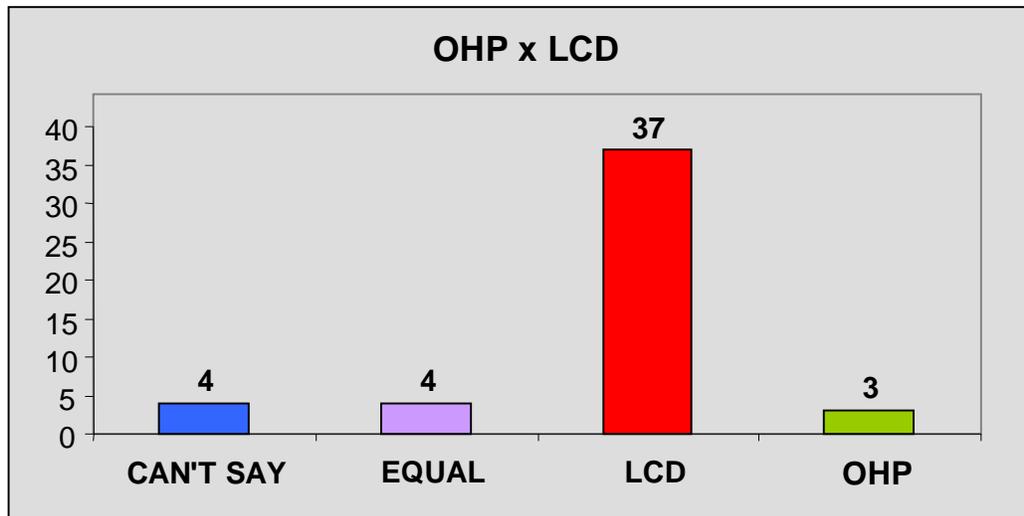
2. Efficacy of integrated lecture –

87.50% students thought that integrated lecture is more effective than traditional & 12.50% thought traditional is better than integrated.

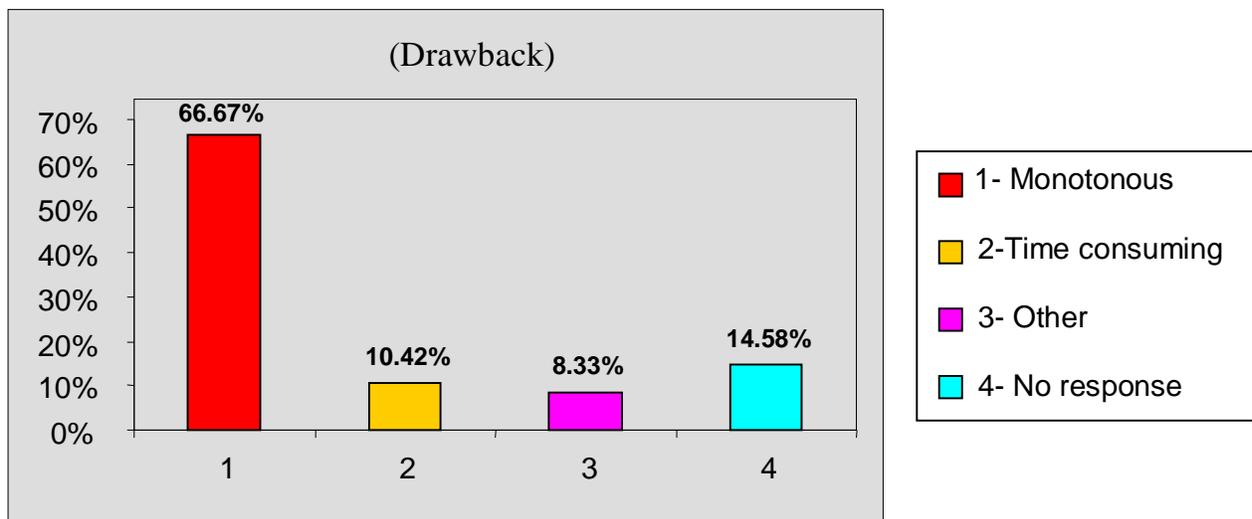


3. Efficacy of LCD presentation –

The following table shows the frequency of effectiveness of OHP & LCD. LCD was chosen by maximum students i.e. 37 students compare to OHP.

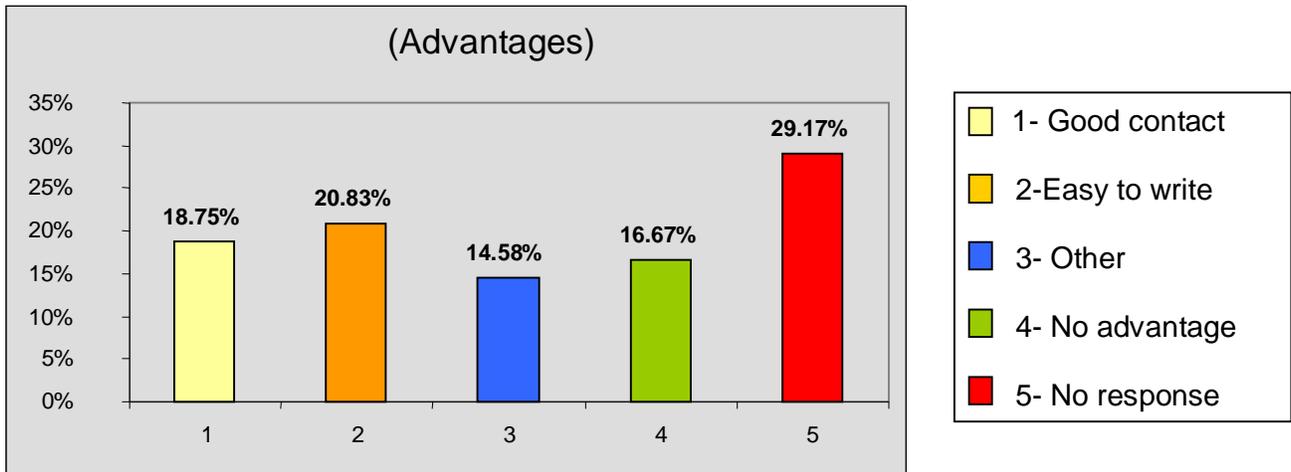


4. Drawbacks of traditional lecture –



The above bar diagram shows percentages of various drawbacks. Maximum percentage i.e. 66.67% students' felt that traditional lectures are monotonous, boring & acts as sedative. 14.58% students did not respond to question. 10.42% students felt that they are time consuming & problems with illegible handwriting. 8.33% gave other drawbacks like mechanisms especially are difficult to understand, knowledge of faculty etc.

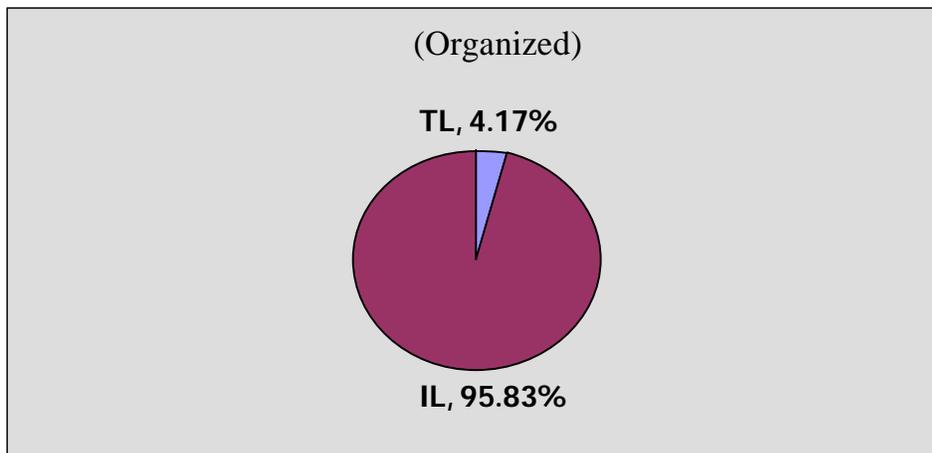
5. Advantages of traditional –



The above bar diagram shows percentage of various advantages. Maximum i.e. 29.17% students did not respond this question. 20.83% students' felt that it is easy to write notes & is less time consuming. 18.75% students felt that there is good personalized contact & understanding. 16.67% students felt that there is no advantage of traditional lecture over integrated lecture. 14.58% students gave other advantages like more details covered & less effort for teachers.

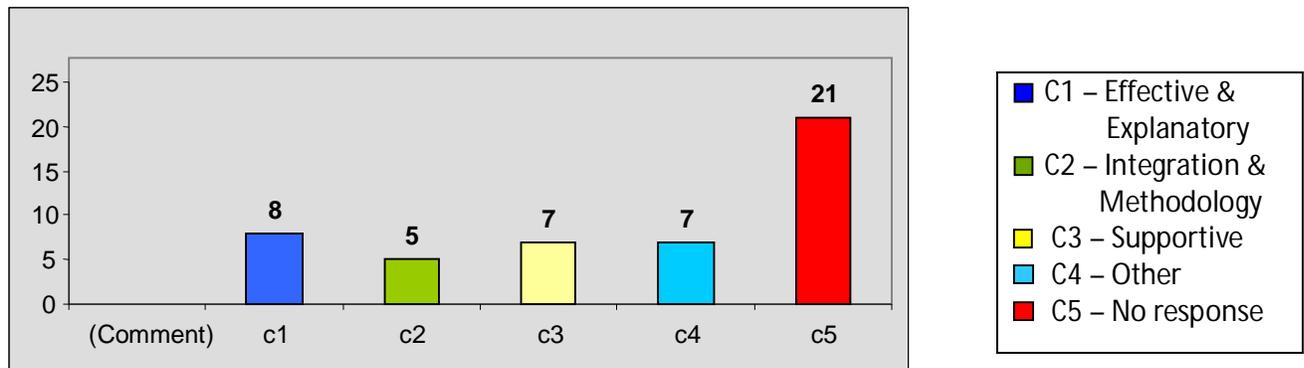
6. Periodic Organization of integrated lectures –

95.83% students wanted more integrated lecture & felt that it gives clearer picture of disease, progress & its management whereas 4.17% students didn't want it.



The above pie diagram shows the ratio of percentage of students who would like to have the integrated & traditional lectures.

7. Comments about integrated teaching methodology-



The above bar diagram shows the frequency of various comments given by the students over the integrated lecture. Most of the students i.e. 21 did not respond to the question. 8 students said that it is more effective & more explanatory. 5 students felt that it is more needed in third year & more supportive method. 7 students would like to have more animation & pictorial presentation. 7 students felt it is time consuming & requires time to write notes & topics should be interesting.

Discussion

This study was conducted to demonstrate the utility & feasibility of an integrated learning process. Students found the integrated learning programme to be a useful, feasible method of learning. However, the statistical comparison between the evaluation after integrated & traditional lectures had not shown significant impact of integrated lectures. But certainly students felt the need for integration.

“Some people talk in their sleep. Lecturers talk while other people sleep.”

This was the effect of traditional lecture for most of the students. They feel that traditional lectures are more boring, monotonous & good sedatives whereas integrated lectures are more explanatory, less boring, interesting & supportive. Most of the students would like similar integrated lectures to be organized periodically, especially for certain topics in third year.

This study was an attempt to improve the quality of medical education with the innovative curricular strategy. The lacuna of the study was the small sample size. Similar study with larger sample size will be more productive. Also, we could not cover the long-term impact of integrated teaching methodology. But the integrated teaching would surely reduce the fragmentation of medical course; prevent repetition, waste of time & rationalization of teaching resources. It will also promote the interdepartmental collaboration & students will learn to apply their knowledge to clinical practice.

Reference:

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ANNEXURE:

Student feedback form

1. Have you heard about the integrated teaching methodology before attending the session?
Yes/No
2. If Yes, Where did you learn about it?
 - a. In clinical posting
 - b. In RGMC
 - c. From teachers/other institute
 - d. In school
 - e. On internet
 - f. Seminars in your college
3. Is integrated teaching more effective than traditional lecture?
Yes / No
4. Is OHP presentation more effective than LCD presentation or vice versa?
5. What are the drawbacks of traditional lectures with OHP presentation?
6. What are the advantages of traditional lectures with OHP presentation?
7. Would you like similar integrated lectures to be organized periodically?
8. Is integrated teaching helpful in projecting a more complete picture of understanding the disease process & its management?
Yes / No
9. Any comments/ suggestions about integrated teaching methodology.