

## PERCEPTIONS OF MEDICAL STUDENTS REGARDING TEACHING-LEARNING METHODS ADOPTED BY FACULTY MEMBERS IN MICROBIOLOGY

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### ABSTRACT

**Background:** The Medical education has been undergoing dramatic reforms globally. As a result various Teaching-learning (T-L) methods are adopted worldwide. Therefore, reforms in undergraduate teaching are of utmost importance. **Objective:** To determine the perception of 3<sup>rd</sup> semester MBBS students regarding prevailing T-L methodology adopted by various faculty members and to get the feedback and suggestions for the reform. **Material & Methods:** Cross sectional study involving 3<sup>rd</sup> semester MBBS students conducted in the Department of Microbiology, RMCH after the approval of IEC over a period of 8 months. A pre and post questionnaire (Likert scale) containing 10 questions regarding the teaching methodologies adopted by the faculty members were administered to the students. Feedback and suggestions were recorded and the feedbacks were again taken after implementation of the suggestions in teaching. Further the feedbacks from faculties were also recorded. Microsoft excel, SPSS were used for data analysis. Student's t test was used and the significance was checked using P value <0.05. **Results:** About 69% of the students were of the opinion of using A-V aids and other modern techniques. 57% & 52% suggested that there should be more discussion about clinical aspects and recent advances related to the topic respectively. Majority wanted optimal use of class time; clarity in conversations. There was a marked change in the perception of the students after meeting and incorporation of suggestions by faculty. **Conclusion:** Various lacunae in the T-L methodologies were established. The study revealed the priority areas for improvement. Regular feedbacks and conduction of the Faculty Development Program may help teachers to plan and improve their teaching.

**Key words:** MBBS, Teaching, faculty, Perception.

### INTRODUCTION:

The medical education and health care in India are facing serious challenges in content and competencies (1). Many Medical Colleges have searched for ways to successfully and

constructively evaluate performances of their faculty members (2).

Teaching learning process should proceed from the known to the unknown and simple to complex. Teaching is not only a transfer of

information from a teacher to the student, but also a two-way process of sharing thoughts and feelings. The teacher should be aware of the recent developments in medical education. Teaching is a process which facilitates learning by encouraging students to think, feel and do. Teaching is a skill and it should be judged for the passion and beauty of the performance and the meaningfulness of the message conveyed to the learners. Teaching is a multifaceted and demanding activity that involves mastery of content, classroom management, techniques of organization, and command of teaching skills. Teaching consists not only of mere instruction, but also of the systematic promotion of learning by the means that promote student retention and learning of the material conveyed during lecture (3).

While these global perspectives are important they do not identify many of the specifics that are associated with effective teaching in medical education and the means that could or should be used to assess teaching effectiveness in IMG's preparation programs. These specifics include: determining what are the effective teaching skills, what beliefs about the teaching and learning process educators and their students hold, what criteria should be used to assess teaching effectiveness, who should evaluate the various aspects of teaching, and what other important elements should and do guide the assessment of effective teaching in medical education. Identifying these components is necessary for educators to improve their teaching and, ultimately, for helping aspiring medical graduates acquire the beliefs, the skills, and the knowledge that are needed in nursing practice. Indeed, evaluation of teaching is central to providing feedback to educators, and for

providing reliable and valid information for the tenure and promotion process.

Teacher's correct perception of teaching methods has a key role in students' disposition to critical thinking. The need of awareness and importance of teaching and learning in medical education need to move towards evidence-based teaching, it is important to examine the educational learning methodology adopted by the various medical teachers which have different modes and methods of teaching. These factors sum up a great impact on teaching.

There is very little documentation of the effectiveness of various active learning strategies, and often faculty are reluctant to integrate such new strategies into the teaching curriculum. There has been a growing concern among medical educators about the quality of medical graduates trained in medical colleges in our country.

This study was the first research endeavor into teaching effectiveness evaluation in the faculties in our college. The aim of this project is to report on the perceptions of students in 3rd Semester with respect to actual and preferred teaching methods, teaching-learning process adopted by the faculty members. The findings of this project will provide some direction towards improving the methodology of teaching.

## MATERIAL & METHODS

*Study type & design:* Cross sectional study from October 2015- May 2016 in Department of Microbiology, Rohilkhand Medical College and Hospital, Bareilly. The 3rd semester MBBS students (100) were included in the study after taking their informed consent.

*Ethics:* The study was conducted after the approval of by the Institutional Ethical

Committee of Rohilkhand Medical College & Hospital, Bareilly, UP.

*Methodology:* The faculty members of the department were included in the study. Each Teacher was asked to take one Didactic lecture, tutorial, and one practical once in a week before and after the suggestions taken from students.

*Evaluation:* A pre and post (after taking the suggestions) self-administered questionnaire was devised which consisted of twenty questions with five options each. Participants were asked to anonymously indicate the degree to which they agree with each statement on a scale ranging from 1 to 5 (1 = strongly disagree to 5= strongly agree) as per the likert scale. The respondents were directed to give unbiased opinion regarding certain aspects of teaching methods, style, suggestions for improvement. The faculty members were sensitized about the feedback and suggestions from the students and were asked to adapt the changes in their teaching methodology in the departmental meeting. The post questionnaire after 11 implementing the suggestions by the students in the teaching after the departmental meeting with the faculties was done. The feedback from the faculty members were also collected to know their reaction towards the comments/suggestions given by the students. The marks has been allotted for the variables in the questionnaire as (strongly disagree=1, disagree=2, neutral=3, agree=4 and strongly agree=5).

We used the Kirkpatrick's Four-Level Training Evaluation Model for evaluation of our study<sup>(5)</sup>. We did a short term evaluation of our study by using first three levels. Level 1 (reaction) was assessed by taking students' perceptions about the lectures on likert scale using a pre lecture questionnaire. To keep the

confidentiality of the comments the students were asked not to write their name, roll number etc. Level 2 (learning) was assessed by observing the student's degree of grasping the topics of lectures, demonstrations through viva and tutorial. Level 3 (Behavior) was assessed by comparing and finding any significant change in the pre and post test results.

**Statistical analysis:** The completed response sheets were collected and statistically analyzed to compute the results using Microsoft Excel and SPSS version 22. The student's t test was used for statistical analysis, P value <0.05 was considered to be statistically significant.

## RESULTS:

A total of 100 students, 51 female students and 49 male students have voluntarily participated in the study. The student's perception regarding the prevailing methodology of the methods through pre and post questionnaire for teaching is tabulated in Table 1. The suggestions by the student's regarding changes recommended in teaching were more use of Audio-visual aids, more discussion regarding clinical and recent advances, use of videos and animations which is depicted in Figure 1.

It was observed that responses of the proportion of students in pre and post suggestion questionnaire were highly significant using student's T test in items numbering 1 to 6. The items no 7 & 10 (students support the use of the modern tools and aids for teaching and references for future studies) were significant while item no 8 & 9 (demonstration of the practical activity, encouragement and positive reinforcement, as well as constructive criticism by the teachers) were found to be insignificant.

The faculty member's view regarding teaching methodologies after the feedback from students during the departmental meeting were tabulated in Table 2.

## DISCUSSION

No two teachers are alike, and any teacher with classroom teaching experience will agree that their style of teaching is uniquely their own. An effective teaching style engages students in the learning process and helps them develop critical thinking skills. Traditional teaching styles have evolved with the advent of differentiated instruction, prompting teachers to adjust their styles toward students' learning needs. This study has investigated the perception of the students regarding the prevailing teaching methodology adopted by the faculty members in Department of Microbiology, RMCH.

In the current study it was observed that more than half (50% or more) of the students have an opinion that: the teacher introduces the topic and learning objectives to the students (60%), This is very important positive aspect found in the teaching methodology as it is well known that learning objectives are specific statements describing what the teacher and the students intend to achieve as a result of learning that occurs in class (6). According to the current study we opined that our teacher uses the modern aids for the explanation of the subject (54%). The literatures from the past have affirmed that use of audio-visual aids improves teachers' performance by saving time and energy. Prasad et al (2005) advocates that audiovisual aids provide basic means of planning, organizing and invigorating the curriculum (7). The basic aim of education must be to lead students towards self learning and lifelong learning and this aim

can be achieved through the use of audio-visual aids as it improves the learning capacities of individual students i.e. learning experience that is worth memorable (Singh et al 2008) (8). About 90% students in the current study said that the teacher explains the material clearly and in ways that are easy to understand, offers alternative explanations or additional examples and clears up confusion, They also said that the teachers demonstrates the practical activity by themselves (80%).

The study found significant lacunae in the current teaching methodology adopted, the students (less than 50%) having opinion that: class time was not used in an efficient and productive manner (60%). The teacher does not uses activities like discussion, group work etc during class time apart from lectures (55%). A Similar observation has been reported by Manjunath SM et al in 2015(9). They found that about 82% students wanted group discussions to be introduced which was significantly more than the findings of Krishna J et al (10). In the current study we found that the teacher does not uses the recent advances of the topic (84%). A similar finding has been reported by Manjunath SM et al in 2015(9) which states that 70% of students wished that recent advances to be included in the curriculum. The current study found that the teacher does not use the modern tools and aids for teaching (56%). The teacher 19 does not offer any encouragement and positive or constructive criticism during the class (53%).

After the incorporation of suggestions in T-L methodology a marked positive change in the perception of the student's was recorded like use of more audio visual aids, more use of clinical and recent advances related to the topic, teacher should enhance their clarity in their conversation, efficient and productive use of

class time. The faculty also had their views regarding the teaching methodology and they also wanted to correct their teaching style according to the new advancing trend in teaching methodology.

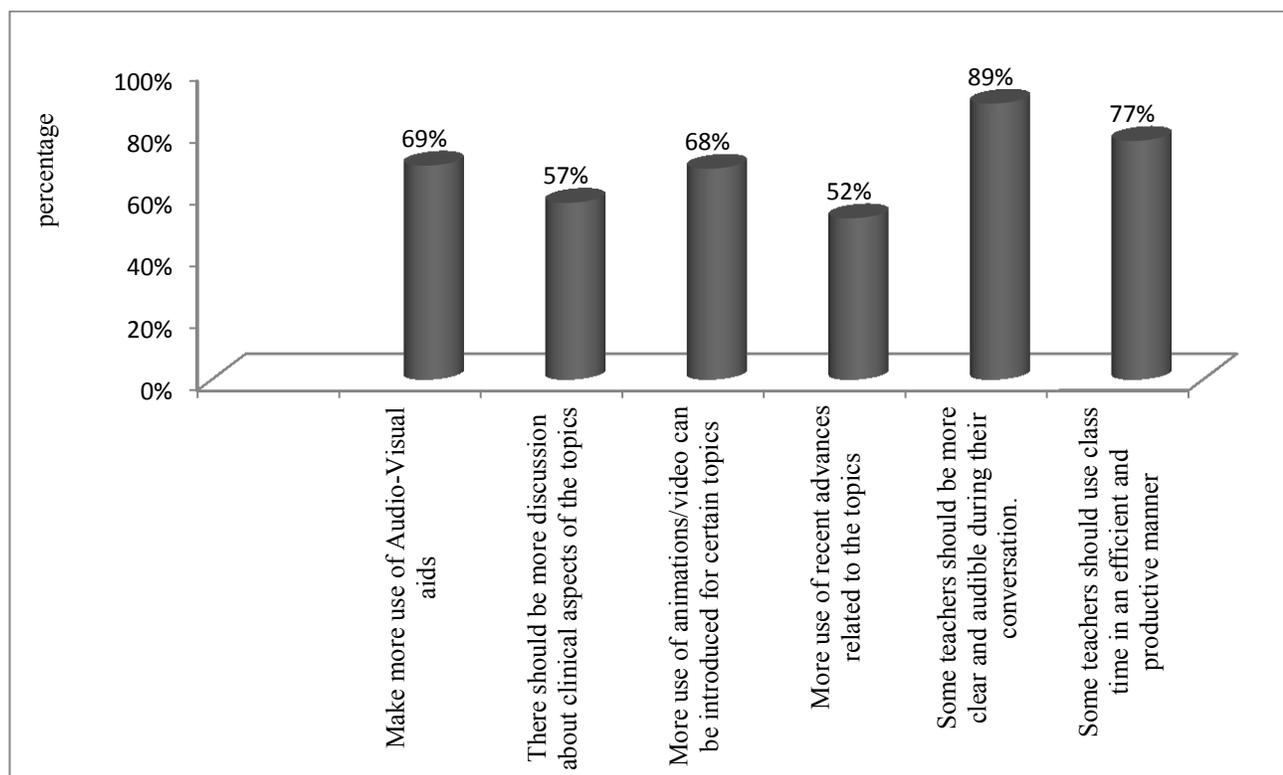
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**Table 1: Student's perception (%) regarding teaching methodology by faculty members before and after the inception of student's suggestions.**

	Items	Pre suggestion questionnaire					Post suggestion questionnaire					T test & P value
		Options					Options					
		1	2	3	4	5	1	2	3	4	5	
1.	Class time is used in an efficient and productive manner.	40	20	00	20	20	00	00	00	20	80	<0.001 HS
2.	Whether he/she introduces the topic and learning objectives to the students.	10	11	19	22	38	00	00	04	28	78	<0.001 HS
3.	The teacher uses the modern aids for the explanation of the subject.	24	22	00	30	24	00	00	00	43	57	<0.001 HS
4.	The teacher explains the material clearly and in ways that are easy to understand, offers alternative explanations or additional examples, and clears up confusion.	12	08	00	27	53	09	07	00	16	68	<0.001 HS
5.	The teacher uses a variety of activities (discussion, group work, technology, etc.) during class time apart from lectures.	26	29	03	20	22	06	13	01	43	37	<0.001 HS
6.	Is the teacher uses the recent advances of the topic.	61	23	00	04	12	12	08	02	32	46	<0.001 HS
7.	The teacher uses the modern tools and aids for teaching.	27	29	05	19	20	07	08	01	34	50	<0.05 S
8.	Is the teachers demonstrates the practical activity by themselves.	06	05	00	38	51	05	05	00	39	51	>0.05 NS
9.	The teacher offers encouragement and positive reinforcement, as well as constructive criticism.	32	21	00	27	20	28	21	00	21	30	>0.05 NS
10.	The teacher gives the references for further studies.	46	12	00	12	30	18	09	00	25	48	<0.05 S

ote: 1=strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=strongly agree, HS= Highly significant, S= Significant, NS= Not Significant

**Fig 1: Students' suggestion about changes recommended in teaching.****Table 2: Teacher's view regarding teaching methodologies after the suggestions by students.**

SL NO	TEACHER'S VIEWS	NUMBER OF TEACHERS	
		FOR	AGAINST
1)	<b>Modern aids of teaching like PowerPoint presentation, video, simulations are necessary</b>	4 (100%)	0 (0%)
2)	<b>use of recent advances in the topic is necessary</b>	4 (100%)	0 (0%)
3)	<b>Facilitation of interactivity among students during lectures.</b>	3 (75%)	1 (25%)
4)	<b>Use of critical thinking and problem solving skills of the students</b>	3 (75%)	1 (25%)
5)	<b>Chalk board is best way of teaching</b>	1 (25%)	3 (75%)