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A Cross Sectional Study of Teaching and Evaluation Methodology in Physiology

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ABSTRACT

Background: Continuous monitoring and improvement is necessary for education technology. The student's feedback is inevitable, inexpensive and valuable tool to improve teaching and evaluation methods. Their feedback could be used to modify the curriculum and teaching practice according to need of students rather than just imparting knowledge on them.

Aims & Objective: To obtain feedback on teaching and evaluation methods in the subject of Physiology to infer any need of change in teaching and evaluation methodology.

Materials and Methods: A written structured questionnaire was distributed among 1st year medical students to get feedback from the students. Data was analyzed using descriptive statistics.

Results:Majority of the students preferred Lecture, Demonstration and self-study.System completion test, tutorials was the best among the evaluation techniques.

Conclusion:Student's feedback is considered to be the best method to change curriculum according to the student's need. It is revealed from the student's feedback that the students were satisfied with almost all the teaching & evaluation practices implemented in our college.

KEYWORDS : Teaching Methods; Evaluation Methods;Medical Students; Feedback;

INTRODUCTION

The quality of students is based on effective teaching methods and their evaluation style by their teachers. There is no direct system for evaluating the quality of faculty teaching. It is matter of debate whether students can evaluate their teachers or not but as per Teachers improvement programs, students feedback is equally important for practice of better teaching and helps to create an environment in which teaching is highly valued.[1& 2]

Students play a critical part in the evaluation, development and enhancement of the quality of this learning experience. Feedback from students allows the colleges to evaluate how its service provision is viewed by its most important group of stakeholders, namely its students. Student involvement requires that students act as collaborators in, rather than merely passive receivers of, teaching and learning.[3]

Self-efficacy refers to beliefs about one's capability to learn or perform effectively. These beliefs predict the degree to which people will make an effort to achieve desired outcomes and persist despite difficulties.[4]

Currently, student's feedback represents the primary means used by most programs to assess their methodology.[5] Feedback from students about adoptedteaching and evaluation methodology isconsidered to be the best method tobridge the communication gap betweenteachers and students.[6]it is an inexpensive and invaluabletool to improve the quality of teaching.

Thus, we planned a study of student's feedback on teaching, evaluation methodology and their own opinion about this.

MATERIALS AND METHODS

This cross-sectional study was conducted at the Department of Physiology, Rohilkhand Medical College & Hospital, Bareilly, U.P., India. This topic is approved by the college ethical committee and thanks to head of the department who give the permission. The written informed consent was taken from the students. The structured questionnaire on teaching and evaluation methods was developed by us after discussion with other senior experienced faculties [Performa is attached – see table 1]. This questionnaire was distributed among the medical students of batch 2015, after completing their first Terminal examination in mid-session. (N=99)

The study was carried out in the subject of Physiology. Students were asked to use an alphabetical scoring method (A, B, C, D and E) against the methods or tick the option which they considered was the best. The questionnaire preserved anonymity. Students were also permitted to offer their own ideas/remarks. They were given 45 minutes to complete the questionnaire form and were not allowed to discuss it amongst themselves during this time.

The data collected was analyzed by SPSS v21.0.0.0 64 bit edition. Descriptivestatistics was applied. Furthermore, the frequency of different remarks made by students in the suggestions/comments section of the questionnaire was analyzed.

RESULTS

Questionnaire forms were distributed among 1st year medical students (N=99), as one student was absent.

As a matter of fact only 96 such forms were selected for further statistical analysis. Incompletely filled forms such as some question were not attempted or more than one optionwas ticked by the students so that these forms were excluded from the study.

In this study lecture, demonstration and self-study were found the best mode of learning. Most of the students remarked seminar to be

boring, monotonous and not interactive thus they rated seminar as average (34%), not useful and useless (45.75%).[Fig 1]

With regard to evaluation method, most studentsopted the terminal exam (68.77%) and system completion tests (59.39%) were most useful. Test at the end of completion of each system with a suitable gap of around 7-10 days were good to revise things and the major exams like terminal exam gave them adrenaline kick, this helps revising things quickly. While they graded tutorials and grand viva were good choices to evaluate knowledge. More than 50% student ticked lab leaving test as average, this reflects in their remarks they demanded frequent laboratory test rather than only LLT at the completion of respective laboratory.The remarks/comment section also reveals that the short test was very frequent and lengthy thus not a good option of evaluation. [Fig 2]

The best sequence to study systems in physiology as demanded by the students was general physiology, nerve and muscle physiology, blood, nervous system including special sense, CVS, GIT, respiratory system, excretory system, endocrine system and reproductive system.

For learning practical skills, the demonstration of practical followed by the practical work was best form (89%) of learning. Practical classes also gave him time for direct interaction with teachers to solve any quarry.Majority of students (73%) found that one year was not enough to cover the first professional syllabus efficiently. Students preferred feedback (68%) on time schedule was of 7:00 am to 2:00 pm with a 15 min tea break.

DISCUSSION

Student feedbacks about the teaching and evaluation methodology are a useful to for monitoring, modifying and including the quality of current curriculum.[7] Continuous improvement andinnovations are very essential in medical education. This helps in making the subject more palatable and interesting for the students thus they better understand and learn the subject.[8]The aim of current study is to identify areas of strength and/or weakness for the education methodology used.

The present study shows that students are satisfied with present teaching methodology consisting of lectures, demonstrations, tutorials and self-study but about 80% of the students considered seminars are average or below average in terms of learning. While they feel seminars are parts of personality development rather than knowledge. Also students kept reusing the presentation material prepared by seniors thus they do not learn much from seminars.[7]Most of the students demands horizontal integrated teaching of Physiology and Anatomy as it is easier to grasp the topic.[7 & 9]

Student's feedback showed that preferred evaluation tools were system completion test, tutorials. In our study most of the students (73%) felt that one year is not enough to cover physiology course in detail as they also do not get enough time for revisions. This result is in contrast with Hem lata, 2008 and Lalvarmawi, 2015.[3 & 7]This discrepancy may be due to the different student population, to confirm that we will plan further study. The Preferred college timing chosen by the students is 7am to 2pm with 15 minute tea break in between as they will get generous time for revision cum self-study. Lectures and self-study are opted very effective learning method in earlier studies as well.[6, 9&10]

Variousuggestions were also given by the students in respect to teaching and evaluation methods. The list of common comments or suggestions is as follows:-

- Interactive lectures with demonstrations & examples
- Revision of last lecture at the start of class
- Summary of lecture at the end of class
- Decreasing the short test time form 1 hour to 30 min and reduce the frequency of such test to 1 short test per 15 days.
- Gap of 15 days before major exams.
- Integrated teaching of physiology & anatomy especially nervous system.
- Frequent assessment of students chapter-wise rather than after system completion.

CONCLUSION

Main problem in current situation is ever expanding course with limited duration thus It is important to know the students feedback about teaching and evaluation methodology that suits them best. Frequent student's feedback may also helpto plan the curriculum and improvementin teaching and evaluation methodologies adopted. Thus this indicates synchronization of teaching, evaluation methods and students need. It is evident from the feedbacks of students that they were nearly satisfied with the current teaching & evaluation practices adopted in our college.

Table 1 - PERFORMA

Questionnaire for evaluation of teaching and evaluation methods

1. Grade the following teaching & learning methods.

(Place the alphabet against each method).

A	B	C	D	E
Very good	Good	Average	Not useful	Useless

I. Revision cum self-study
II. Lecture
III. Tutorial
IV. Demonstration
V. Seminar

2. Rate the usefulness of each of the following evaluation methods in preparing you for your university professional examination. (Place the alphabet against each method).

A	B	C	D	E
Very good	Good	Average	Not useful	Useless

I. Tutorial
II. Grand viva
III. LAB leaving test
IV. Terminal exam
V. Send up exam
VI. System completion test
VII. Short test

3. How much time, according to you, would be adequate for first professional M.B.B.S. teaching? (Please encircle one)

- 9 Months
- 12 months (One Year)
- 18 Months

4. What is the best order to study systems in Physiology? (Write the numbers1,2,3……. in order of your preference against each system)

- Blood
- General Physiology
- Nerve & Muscle
- GIT
- Respiratory system
- Cardiovascular system
- Excretory system
- Central nervous system
- Special senses
- Endocrinology
- Reproductive system

5. Should practicals be_____? (Encircle one)

a. Demonstration by teachers only
b. Demonstration followed by practical work by students
c. Practical by students followed by assessment

6. How were practical demonstrations? (Please encircle one)

- Very helpful
- Helpful

- Somewhat Helpful
- Not Helpful
- Useless

7. Were your queries clarified during practical demonstrations?(Please encircle one)

Yes No

8. Which according to you are better timings? (Encircle one)

a. 8.00 a.m. to 2.00 p.m. with 15 min tea break in between

b. 8.00 a.m. to 4.00 p.m. with 1 hour lunch break

9. Any suggestions/comment:

*LLT: Lab leaving test; SCT: System completion test

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