

Research Article



## The Methodology Of Feedback System In Evaluating The Formative Assessment In Undergraduate Medical Education Second-Year Pharmacology In A Developing Medical College In Himachal Pradesh

Ghulam Mohammad Loan<sup>1</sup>, Deepak Prashar<sup>2\*</sup>, Sanjay Kumar<sup>3</sup>, Erwin M. Faller<sup>4</sup>

<sup>1</sup>Department of Pharmacology, Dr Radhakrishnan Government Medical College Hamirpur (HP)-Indian

<sup>2</sup>Department of Pharmacy, Shanti Niketan College of Pharmacy, Ratti Mandi (HP)-Indian

<sup>3</sup>Department of Economics, Government College Multhan, Kangra (HP)-Indian

<sup>4</sup>School of Allied Health Sciences, San Pedro College, Davao City, Philipines

**Corresponding Author :**

**Deepak Prashar**

Department of Pharmacy, Shanti Niketan College of Pharmacy, Ratti Mandi (HP)-Indian

Email: [prashardeepak99@yahoo.in](mailto:prashardeepak99@yahoo.in)

### ABSTRACT

**Background:** The aim and objective of the study was to determine the teaching methods and their pros and cons that predominate in students in understanding and scoring in formative and summative assessments. Pharmacology is a course that needs extra care in this direction as this field is ever-changing. It is very difficult for a student to remember the classification of drugs, names, pharmacokinetics

**Methods:** A prospective study was carried out from April 2020 till February 2022. 120 students of second year session 2019, first CBME batch who appeared after 11 months for the summative assessment, were included and there was one drop out case so only 119 students were included

**Results:** pharmacodynamics, indications, contraindications, side effects, and adverse drug reactions. The present study focuses on the mental level and the economical aspects of the persons involved in the establishment of the medical college.

**keyword:** Feedback, system, Assessment, education

## INTRODUCTION

The subject of Pharmacology is always been an interesting and eye catching for the medical fraternity. In this regards numerous of research and reviews are been published in the past to observe the perception of the medical faculty and students today's this subject. The session wise data collection is being carried out in the current research study. This session was unique in the sense that they were to complete the course in eleven months only. Their teaching was carried out by objectives and competencies. There is a flood of knowledge that comes to pharmacology. In our study, there were 119 students and one was drop out. There were three class tests, two terminals and one send up during 2021 who appeared in 2022. Some students didn't appear in tests or terminals but in the final formative assessment maximum students appeared. At the end of the session some were having less attendance and maximum students were not up to the mark, not only in our subject but also in Microbiology and Pathology too. From our department 36 students were dropped as per their assessment records but it was decided that final formative assessment is taken as the final assessment before this session is called as send up. In this exam only 16 students were failing. Dean of the medial college put up the case in high powered committee, college council allotted one month fifteen days to faculty to prepare the students through feedback processes both in theory as well as practical. This process served two advantages to make them eligible both in attendance and in theory and practical for the summative assessment.

## MATERIAL AND METHODS

A prospective study was carried out from April 2020 till February 2022. 120

students of second year session 2019, first CBME batch who appeared after 11 months for the summative assessment, were included and there was one drop out case so only 119 students were included. Pharmacology classes were delivered four classes in a week and four practical sessions comprising of two hours of two batches of one class. Other than CAL laboratory practical work is bare minimum for teaching. Skill development was given maximum time for ANS, CVS and general Pharmacology. Basics and terminology were the main areas where the thrust was made. Roster of the classes is already uploaded on website but in addition to that monthly rosters were issued by the department well advance and are uploaded on WhatsApp group of students and faculty. Teaching roster is also put on notice board for the information of all stakeholders. Since practical course in clinical pharmacology, clinical pharmacy, Experimental pharmacology and prescription were the topics in Practical sessions.

There were five faculty including Sr. tutor and 24 students' group of five were formed and were given to each faculty in one month. The groups were assigned on the basis of Latin square method. This is to make a homogeneous teaching learning amongst the students. Almost 90% syllabus was completed. The pattern of examination was made them to understand from the day first of session as per the CBME. Still each topic was discussed in threadbare like long questions, short questions, very short questions, MCQs, Problems directed study as is given at the end of the lesson on Essential Medical Pharmacology, 8<sup>th</sup> Edition. Pharmacokinetics problems, P-Drug problems were taught nicely. Class tests were taken chapter wise i.e., General pharmacology, Peripheral nervous system,

etc., Terminal tests T1 or T2 comprised of 100 marks each and the last formative assessment was scheduled as per the summative assessments. It consisted of paper A and Paper B comprised of 100 marks each and practical consisted of 80 marks plus twenty marks of viva voce. In the send up test 119 papers were circulated to each faculty to check one allotted question in a paper so that there is no bias in marking the papers. Viva voce was performed and each student was interviewed based on specific chapters and all the 119 students were attended by all the faculty. After summing the marks 36 students were absent from either class tests of terminal tests. Out of these 36 students 28 were failing and eight were passing. But in the final Formative that we called as Send up only sixteen were failing and all were taken for teaching for One and a half month. Their practice in theory and practical sessions were carried through WhatsApp Group. Their feedback was taken on weekly basis. They showed improvement both in theory as well as practical. Their attendance also improved in this prospective method.

## RESULTS

There were 119 students in our study. Some students who were failing either in class tests or Terminal tests were included in send up or final formative assessment. Those

students who were absent or failing in these examinations were reexamined and those students whose attendance were not standard or up to the mark, were recalled for extra classes at the end of session before summative assessment. Moreover, 16 students who were failing in send up were prepared rigorously for theory as well as practical. They were given long questions, short questions, very short questions, problems like OSCE, MCQs etc. As per the guidelines from Dean and recommendations of the college council along with the other departments like pathology and microbiology, feedback from students were satisfactorily recorded and some online teaching learning sessions were carried out on these students. There was almost one month and fifteen days to carry out this practice. All these students did well and were included in the final formative assessment or send up test. We did not carry out the result of formative assessment in the missing data for those students who missed the tests during the session and who were not eligible to appear for the summative test. We included the final formative assessment for our results because it was carried out as replica of summative assessment. It comprised of theory 200 marks comprising of two papers of 100 marks each on the pattern of model paper which was designed by the HPU and practical 100 marks.

**Table 1: Theory/ Practical Marks Assessment**

Marks Distribution	No of Students	Percentage
50-60	79	66.4%
61-70	40	33.6%

**Table 2: Theory Attendance Assessment.**

Attendance Distribution	No of Students	Percentage
71-80	12	10.08 %
81-90	33	27.73 %
91-100	74	62.18 %

**Table 3: Practical Attendance Assessment**

Attendance Distribution	No of Students	Percentage
81-90	88	73.95 %
91-100	31	26.05 %

**Table 4: Result Range of the Students**

Number of students	Class Percentage ratio	Percentage Range
21	17.65%	50-60 %
64	53.78%	61-70%
31	26.05%	71-80%

In the send up or final formative assessment, in Table 1 79 students (66.4%) obtained 50-60 marks. 40 students (33.6%) obtained 61-70 marks. Table 2 In theory attendance 12 students (10.08%) got 71-80 %, 33 students (27.73%) obtained 81-90% and maximum 74 students (62.18) were included in 91- 100%. It is below 100%, it denotes the range. In Table 3 In practical 88 students (73.95%) were included in 81-90% range. Only 31 students (26.05%) were having 91-100% attendance.

In the summative assessment the result has been declared recently, was the first batch through CBME is given in table4. In which three candidates were declared fail and 116 were declare pass. Only 2.52% dropped in the summative assessment and rest 97.48% passed. This summative test was conducted by the HPU University and the two external examiners were called from outside the Himachal University from

different states. They conducted the practical examination on three consecutive days in fair and confidential ways. In Table 4 the results suggested that 21 students (17.65%) got 50-60 % marks, 64 students (53.78%) got 61-70% and 31 students (26.05%) got 71-80% marks.

## DISCUSSION

Pharmacology subject is very difficult and is flooded with new drugs. Their mechanism of action, off label use, repurposing, indication, contraindication is very difficult to remember at the graduate level. 1424 pharmacologists participated in a survey and they discussed CBME, implementation. 90.3% responded. Sensitization workshop makes awareness amongst the faculty. Lack of training about CBME was the most cited reason of non-preparedness. 70.8% pharmacologists expressed concern in reducing the teaching

hours as the syllabus of pharmacology is vast and training of teachers to implement the CBME is very important<sup>1</sup>. In our department three faculty members are CBME trained and all of them are resource persons and deliver talks on CBME through MEU of Dr RKG MCH-Hamirpur HP. It is adequate to emphasize the academic need of reviewing the teaching program from time to time and making adequate modifications to keep pace with progress in the subject to cope with the requirements of the beneficiaries. This study assesses the need that assessed feedback of second year medical students on teaching learning methodology and evaluation methods in pharmacology<sup>2,3</sup>. 16 students who were not up to standard for the summative examination were prepared and their feedback was taken for one and a half month period in different ways and they were given problems which they solved on daily basis and showed the good result in the final formative assessment and thereof in the summative assessment where only three students were declared fail.

Formative assessment is described as the process of appraising, judging or evaluating student's work or performance and using this to shape and improve students. Quality of feedback is very important in CBME. Many factors are important in feedback are to create good academic atmosphere in the department, lack of motivation from students and faculty. Administration of the college has to play an important role in this regard. Dean and principal of college have played a good role to carry out the feedback from 12 students who were initially stopped to appear for the summative assessment. There is a need to develop a system of feedback at national level to get the homogeneous results in both formative as well as summative assessment.

Feedback is the single most important factor that has shown to have the maximum impact on student learning and accomplishment<sup>4,5</sup>. The quality of feedback given to the learner is of prime importance. Its technical aspect appropriateness, accessibility, catalytic and inspiring value to the learner<sup>6</sup> are largely responsible for its positive or negative pedagogical connotations. The feedback provided is only useful to the recipient to its specific, accurate, timely, clear, focused upon the attainable and expressed in a way which will encourage a person to reflect upon his learning and feel the necessity to change<sup>7</sup>. In order to ensure quality feedback given in formative assessment teachers need to be trained and an environment conducive to such a culture be facilitated. The educator must also be sensitized to the psychological needs of the recipient<sup>8</sup>. No matter how well intentioned the formative assessment is, its effectiveness is reduced, if students are not appropriately informed of what is expected from them<sup>7</sup>.

According to Cohen, feedback is one of the most instructionally powerful and least understood features in instructional design. It is highly technical task and it cannot be assumed that faculty members who are experienced in teaching are also geared to provide feedback, a process that can either build or shatter a learner's self-efficacy. It should not be regarded as an implicit activity or as a routine part of student teaching<sup>9</sup>. Students training are very important. Since the opportunity to improve is one of the factors that determine the usefulness of the activity, the students must be taught how to receive the feedback, acknowledge his deficiencies and bridge the gap in learning through active initiatives<sup>7</sup>.

Regulatory body has formulated eligibility criteria for the students to appear

in summative assessment<sup>10</sup>. Apart from their performance in internal assessment, a significant weight age has been given towards maintaining the requisite attendance. As per recent norms an undergraduate should have a mandatory attendance of 75% in theory and 80% in practical/clinical in being eligible to appear for the summative assessment in a specific subject<sup>10</sup>. In our study also, we made every student eligible for the summative assessment by delivering more classes to 16 students and to those who were deficient in theory/practical attendance. There is a great correlation that students with better attendance accomplished good performance than that of the students with less attendance<sup>11,12</sup>. As it is well known fact that in any field, students tend to have little attention span unless the teaching session is interspersed with some of the other kind of interactions to ensure that students remain engaged throughout the learning period<sup>13</sup>. The clause of meeting attendance for being eligible for the summative assessment is a must in many ways to ensure that students remain involved in their learning process. However, there is definite scope to modify the attendance norms depending on the type of sessions and whether the proposed knowledge and skills can be acquired within the four walls of a class or by the student on their own<sup>14</sup>. It is important to assess the feedback of second year medical students on teaching learning methodology and evaluation<sup>15</sup>. A survey of Italian doctors has considered the pharmacology teaching they received to be theoretical and opined that more time and attention should be devoted to issues more closely related to clinical practice<sup>16</sup>.

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