

Across The Courses and Years: The Course Evaluation of E-Learning in Medical Education. A Cross-Sectional Study

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Abstract

Program Evaluation is the systematic gathering of information for purposes of making decisions. After the development and establishment of e learning program, Pak Red Crescent Medical & Dental College (PRCM&DC) were made with the help of the Medical Education Department a program evaluation questionnaire based on all frequently asked questions send to all students by e evaluation form. All the students who have The Students who have internet facility and attend the classes regularly are included. Student's response rate is 34.88%. Reliability coefficient of the questionnaire is 0.822. Majority of the students found the clear objectives of the subject and interactive teaching decrease the anxiety. Students were satisfied with learning material which is provided by the facilitators like lesson plans, course notes, handouts books and important notes are very helpful. Many students agreed that they were encouraged to asked questions and give answers during lectures, and most of them were satisfied with the delivery and pace of lecture. Majority of the students were satisfied with the present teaching through e learning method. They were well understood the teaching and learning material and also were appreciate the organization of the thought material.

Keywords: Course Program, e Learning, Medical Education, Course Evaluation.

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INTRODUCTION

Meaningful documented input from students is essential for the improvement of courses and one of the most common indirect course assessment methods is the course evaluation survey. During the Covid 19 pandemic, when we are shifted 15% to 100% on online teaching. These surveys providing us Student feedback which has been considered to be an effective and informative tool for improvement, modification and up gradation of undergraduate courses. In an era of accountability, students face an overwhelming burden of dispersed knowledge and desperately select for repetition and memorization rather than understanding [1]. This e-questionnaire allows the students to reflect and provide feedback on their learning and making basic as well as clinical subjects more interesting and practicable [2].

Many studies show that students learn best when learning objectives and learning outcomes are well identified, teacher is capable of related to each other and allied to real-life examples [3]. Learning can

thus be facilitated in our medical schools by integration of knowledge in basic and applied subjects with eradication of minor details [4]. During covid, we are shifted from partial to 100% from face to face class to virtual classes and e-learning only source of update knowledge, not skill nor attitude and it is a time to experiment the possible future changes in traditional curriculum, many medical colleges in first two and a half years we taught basic sciences subjects like Anatomy, Physiology, Pharmacology, Pathology etc. In this study, first and second year medical students evaluated their basic science subjects on multiple common items [5].

AIM & OBJECTIVES

- To find out the progress of the program
- To identify the problems
- To utilized the available resources
- To ensure that current and future curriculum changes meet program goals and objectives
- To collect the fundamental information for future evaluation and planning

METHOD

They were given questionnaire, based on frequently asked questions by the students during the establishment of the e-learning program. This was a cross-sectional descriptive analytic study, which was conducted in 2020 during the covid 19 pandemic, at the Pak Red Crescent Medical and Dental College, Dina Nath. Subjects were medical students during their medical education (from first to final year MBBS). Both genders were recruited as respondents in this study. The course evaluation at this college is web-based: after half completed course, students receive an invitation by Whatsapp message to evaluate online all subjects for which they part took in the examination. Since the academic calendar ends in January, this means that course evaluations for the first term take place during the second term.

Total number of medical students in first year 100 students, second year 100 and third year 90 students in fourth year 36 students and in final year 18 students. The calculated sample size was 121. After explaining the study design and objectives on zoom meeting, we obtained students' verbal consent. This study was approved by the medical education committee (the Pak Red crescent Medical and Dental College).

We used a questionnaire having two parts. In first part, the students recorded their gender, the living state (day scholar or hostilities), study year and marital status. And second part, based on 22 questions on 5-point Likert scale over the elements that we considered as affective factors on medical education in different domains like learning outcome, classroom environment, teaching and learning methodologies, assessment methods and program feedback etc., were those which were considered as the most important elements of medical education. The statistical package for the social sciences (SPSS version 24) was used for statistical analysis. The relation between satisfaction of professional teaching, bedside teaching, theoretical education and variables was analyzed by chi square. Mantel Haenzel Chi square was computed whenever indicated. P values equal to or less than 5% were considered significant.

Inclusive Criteria: All the students who are attending the online classes and they have good internet service at their places

Exclusive Criteria: All the students who have internet connectivity issues and they are unable to attend online classes.

RESULTS

The participants of this study were the first to final-year medical students at the Pak Red crescent Medical and Dental College, Dina Nath during 2019-2020. The first and second year class comprised 56 students and the third year class 41 students fourth year 25 students and final year 12 year (total students are 344). 120 students give the response out of that only 105 fill complete Performa, so our response rate is 34.88%.

Reliability Analysis is an important concept in applied research. The reliability analysis has shown that there are 22 items was used for program evaluation in medical students. Value of cronbach's Alpha was 0.822. It is also called reliability coefficient. It is a simple rule in the description of the reliability coefficient that higher the value higher will be there liability of data [6]. Gender distribution showed female preponderance 62(56.4%) and male 43(39.1%). The table no III has shown that correlation coefficient value is 0.067 which is away from 1 which shows no any positive relationship between students gender and status that is either they live in their homes or in boarding.

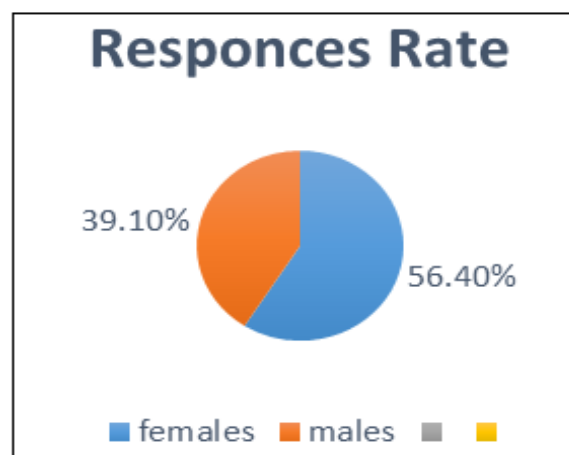


Fig-1: Gender based distribution of responses

Table-1: items reliability coefficient

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.628	.822	22

Table-2: Study characteristics of 22 included studies describing an e-learning program evaluation

S/No	Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Cronbach's Alpha
1	The learning outcomes & course objectives were clear	10(9.1%)	37(35.2%)	25(22.7%)	22(21%)	11(10.5%)	.608
2	The course workload is measurable	8(7.6%)	31(29.5%)	24(22.9%)	24(22.9%)	18(17.1%)	.611
3	The course well organized	7(6.7%)	33(31.4%)	31(29.5%)	25(23.8%)	9(8.6%)	.613
4	To Participate actively in the course	25(23.8%)	48(45.7%)	20(19.0%)	6(5.7%)	6(5.7%)	.624
5	To you think you have made progress in this course	7(6.7%)	44(41.9%)	20(19.0%)	26(24.8%)	8(7.6%)	.610
6	Approximate level of your own attendance during the whole course	3(2.9%)	8(7.6%)	25(23.8%)	41(73.3%)	28(26.7%)	.646
7	The course was well structured to achieve the learning outcomes	7(6.7%)	40(38.1%)	21(20.0%)	25(23.8%)	12(11.4%)	.603
8	The learning and teaching methods encouraged your participation	9(8.6%)	44(41.9%)	23(21.9%)	16(15.2%)	13(12.4%)	.618
9	The overall environment in the class was conducive to learning	9(8.6%)	41(39%)	26(24.8%)	22(21.0%)	7(6.7%)	.613
10	Classrooms were satisfactory	10(9.5%)	50(47.6%)	25(23.8%)	10(9.5%)	10(9.5%)	.601
11	Learning materials (lesson plans, course notes and handouts etc) were relative and useful	10(9.5%)	48(45.7%)	25(23.8%)	13(12.4%)	9(8.6%)	.616
12	Recommended reading books etc were relevant and appropriate	10(9.5%)	71(67.6%)	17(16.2%)	6(5.7%)	1(1.0%)	.613
13	The provision of learning resources in the library was adequate and appropriate	7(6.7%)	45(42.9%)	33(31.4%)	16(15.2%)	4(3.8%)	.612
14	The provision of online learning resources was adequate and appropriate	8(7.6%)	33(31.4%)	18(17.1%)	25(23.0%)	21(20.0%)	.594
15	The pace of the course was appropriate	4(3.8%)	39(37.1%)	30(28.6%)	22(21.0%)	10(9.5%)	.596
16	The ideas and concepts were presented clearly	5(4.8%)	42(40.0%)	31(29.5%)	15(14.3%)	12(11.4%)	.599
17	The method of assessment were reasonable	4(3.8%)	44(41.9%)	29(27.6%)	11(10.5%)	17(16.2%)	.597
18	Feedback on assessment was timely	5(4.8%)	42(40.0%)	31(29.5%)	15(14.3%)	12(11.4%)	.666
19	Feedback on assessment was helpful	4(3.8%)	50(47.6%)	28(26.7%)	13(12.4%)	9(8.6%)	.597
20	You understood the lectures	5(4.8%)	39(37.1%)	22(21.0%)	26(24.8%)	1(1.0%)	.610
21	The material was well organized	4(3.8%)	55(52.4%)	27(25.7%)	11(10.5%)	8(7.6%)	.618
22	The lecture was responsive to student need and problems	3(2.9%)	43(41.0%)	32(30.5%)	16(15.2%)	10(9.5%)	.728

Table-3: Correlation between gender and status

Correlations			
		Gender	Status
Gender	Pearson Correlation	1	.067
	Sig. (2-tailed)		.496
	N	105	105
Status	Pearson Correlation	.067	1
	Sig. (2-tailed)	.496	
	N	105	105

DISCUSSION

Program evaluation is a process of making judgment about the extent to which a particular educational program achieved its objectives [7] and is

also measuring the extent to which a program delivered is effective and efficient in full filling its intended purpose of its development or creation. Feedback from the students is a reasonably accurate and most reliable way to test the teaching and learning process and its efficacy [2, 8]. By E Questionnaire forms, it is also very comfortable, affordable and easy to procure.

A lot of researches have been conducted to find out the response rate of students. Some scholars think that it depends upon the students themselves. When we compared the academic performance of the boarder and day scholar students responses [9]. The majority of the participants were male students. In general, the majority of students who participated in

this research expressed a positive perception of the teaching and learning during online teaching [2]. In this study we found no any correlation between gender and living status of the students Mengel *et al.*, found the almost same results in their study [10].

In present study 44.3% students are in favor with the written learning objectives and outcomes before starting the class because it reduce the risk of wasting the time as well as stress and anxiety of the students [11]. Initially students feel, depression, stress and anxiety during medical course, will influence on performance and after that, they become well organized with their course as the results shows first 2 years years students feel more burden of study as compare to remaining 3 years students, about 40% students are feel the course workload is more, only 22.9% are neutral and 37% students feel no course work load for them [12, 13]. Many studies shows, active learning is more powerful for life long memory than deductive, 69.5% students wants to learn the course through active learning while only 12% wants deductive lectures [14]. Many studies has discovere beneficial view as to what encouragethe students to express in tutorials as well as in classroom. With this understanding, the facilitators can plan different strategies and apply proper techniques to create aninteractive classroom [15]. As results shows in present study, 50.5% students were agree on it, 21.9% students were neutral and 27.6% were not agree. Although it is difficult to assess the medical students from online assessment because by this we only assess the knowledge nither skill nor attitude [16], that's way only 48% appreciate the assessment methodology, only 57% students are not satisfy with assessment methodology. The results are full endorse the research held in Samara University [17]. Timely Feedback on assessment was helpful for study 54% student are appreciate it and only 9% students are not like assement feedback sysem [18].

CONCLUSION

Limitations of the Study

We also recognize that student course evaluations have their limitations. Although highly reliable, the quantitative ratings in this study were based on cognition, not skills nor attitude. Another limitation is that courses may need to include material for which students may not see the instant assessment, teaching material that may not be rated highly even if well organized and delivered.

Recommendations of the study

Experienced and well trained educators need to include what is professionally valuable rather than automatically defer to student approval. However, there seems to be little question that well organized content and delivery is valuable in learning and is furthermore rewarded with high quality ratings by student

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