

THE EFFECT OF PEDAGOGICAL TRAINING, IN A VIRTUAL TEACHING/LEARNING ENVIRONMENT: AN ANALYTIC FACULTY TRAINING REPORT

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ABSTRACT

Faculty development programs play a vital role in enhancing the quality of medical education. The Department of Faculty Development at CMH LMC & IOD focuses on training teachers to improve teaching methodologies, assessment tools, and faculty confidence. This study aims to evaluate the impact of training on faculty effectiveness in a virtual teaching/learning environment. A six-month certificate course on teaching, learning methodology, and assessment was conducted from February to July 2022. A total of 162 participants from different medical and dental colleges in Pakistan were enrolled. Pre- and post-course assessments were conducted using a questionnaire with both closed-ended and open-ended questions. Descriptive statistics were used for data analysis. The majority of participants were female (57.61%), and various faculty positions were represented. The participant's performance in class teaching, learning, and presentation skills received a high level of satisfaction. Statistical analysis revealed a significant association between participants' ability to perform certain tasks in teaching, learning, and presentation skills and their responses to related questions. Open-ended questions provided insights into participants' personal problems as teachers, suggested solutions, and recommendations for improving the training program. The study highlights the importance of pedagogical training in improving teaching strategies and student engagement. It identifies the need for student-centered teaching approaches and the importance of addressing faculty and student concerns. Multi-departmental participation and practical training sessions were key success factors of the program. The certificate course was well-received by participants and achieved high scores on all assessed criteria. The findings support the effectiveness of the training program in enhancing pedagogical expertise among medical faculty.

Keywords: Certificate in health professions education, Teaching, Learning, Assessment, Online course, Medical Education

INTRODUCTION

The Department of Faculty Development in CMH LMC & IOD is indispensable for improving and maintaining the quality of medical education. Teachers' training is one of the fundamentals of the faculty development programs (FDPs) that focuses on teaching-learning methodologies, principles, and the construction of assessment tools and methods that stimulate teachers' confidence. This enhances the capacity of faculty in teaching and learning and assesses the performance of the students(1).

According to Harden R.M. (1996), "Faculty development has become a highly important component of medical education and has a vital role in promoting academic excellence and innovations" (2). The motto of our online CHPE program is:

"Change Faculty, to change students, to change future."

It has grown to be a significant part of medical education and plays a crucial part in fostering academic achievement and innovation (3). We must cultivate educational leaders and advance

the scholarship of teaching if we're going to provide the best possible healthcare education (4). High education requirements that are compatible with the realities of the actual world are required for the training of health professionals (5).

Mainly this program was aimed to enable the faculty members to further develop their knowledge of best practices in teaching and learning, and assessment strategies, which helps to address the strength and weaknesses of each assessment instrument for developing valid, reliable, and objective test items in their daily academic activities(6).

The vision of the course is "To transform faculty members who can influence minds for converting medical students into lifelong learners who can challenge the status with logic and reason to bring change". The objective of this study is to check "the impact of pedagogical training on faculty members' effectiveness in a virtual teaching/learning environment"

The certificate course content revolves around Teaching, learning and Assessment(7). All the recent trends in medical education will help health professionals acquire basic concepts and principles of medical education and its application in the program to demonstrate the basic competencies of an effective teacher (8).

METHODOLOGY:

In collaboration with Lahore Garrison University (LGU), the Department of Faculty Development at CMH Lahore Medical College organized a six-month certificate course on 'teaching, learning methodology, and assessment' for medical professionals from February to July 2022. A total of 20 national and international health professions educationists served as facilitators to train the participants/residents. To select the participants, the FDP CMH authorities sent a letter to the principals of all medical/dental colleges in Pakistan, inviting interested faculty members to register for the training program. Out of 80 medical and dental colleges, 162 participants were enrolled.

To evaluate the effectiveness of the program, pre- and post-course assessments were conducted using a semi-structured questionnaire with seven Yes/No statements and six open-ended questions. The aim of the research was to evaluate the experiences of all participants using connoisseurship and criticism in an applied evaluation, employing a mixed-methods approach (qualitative and quantitative).

The results were obtained from the 13 statements on the evaluation data sheets completed by 125 participants, yielding a response rate of 77.16%. The data were analyzed using descriptive statistics in SPSS version 16.

Ethical considerations

This study was approved by the Ethics Committee of CMH, Lahore Medical College & IOD, Pakistan.

Results:

Participants' Evaluation:

Of the 125 participants, the majority were female (57.61%) and the rest were male (42.41%). The participants included 6.4% professors, 11.2% associate professors, 28.4% assistant professors, and 44% demonstrators/registrar or medical officers. The majority of the participants were from the faculties of medicine and allied (33) and surgery and allied (44), followed by basic sciences (23) and dental sciences (25). The mean score of the participants' performance in class PowerPoint presentations was very good, at 73.16 ± 8.09 , with a range of 59 to 85. This indicates a high level of satisfaction among the participants with their performance.

For the statistical analysis, the chi-squared test was used to determine if there is a significant association between two categorical variables. The significance level of 0.05 was used. The analysis revealed a significant association between the respondents' ability to perform certain tasks in PowerPoint and their responses to questions 2-6. However, there was no significant association between their opinion on the engagement and attentiveness of students during online classes and their response to question 1.

Q/no	Questions	Yes (n=125)	No(n=125)	Chi-square	p-value
1	Your opinion about the engagement & attentiveness of students during your online class	69 (55.2%)	59(47.2%)	3.207	0.073
2	Can you write different languages in a PowerPoint slide?	85(68%)	40(32%)	25.200	<0.001
3	Can you insert multiple pictures in PowerPoint slides?	79(63.2%)	46(36.8%)	7.015	0.008
4	Can you insert video clips in PowerPoint slides?	73(58.4%)	52(41.6%)	7.414	0.0006
5	Can you animate a pathogenetic diagram in a sequential way in PowerPoint slides?	59(47.2%)	66(52.8%)	5.296	0.021
6	Can you animate a graphic diagram in a sequential way in PowerPoint slides?	74(59.2%)	51(40.8%)	6.518	0.011

Table 1: Distribution of opinion of the participants on the use of support materials

The results of the open-ended question:

The evaluation questionnaire was responded to by participants in writing (comments and feedback) at the last of the training program. The open-ended questions were:

1	Please identify two most important personal problems as a teacher you feel before the training
2	What was your own suggested solution for your identified problems?
3	If you become Principal, what would be your immediate preference to address? Just emphasize two points.
4	Please identify two most important personal problems as a teacher
5	Please identify your own two major methods to keep your students engaged & attentive in your actual class.
6	Please write if you have any suggestions to improve the present training

Table 2: list of open-ended questions

Based on a question like ‘Please identify two most important personal problems as a teacher you feel before the training’ participants highly appreciated the commencement of the training program on teaching methodology and also valued almost all areas of the workshop such as PowerPoint presentation, time management, resource persons/facilitators, the interaction between facilitators and audiences, etc.

Regarding the initiation of the training on teaching methodology, participants stated, ‘huge class (large number of students) makes it difficult to identify students who are not attentive, lack of proper multimedia.....whole class is not able to focus and see the projector screen in physical class.’

1) Short attention span of students 2) lack of responsibility for their own learning.’

‘No proper training /workshops to improve teaching skills related to medical education.’

According to the question. **What was your own suggested solution for your identified problems?** Though participants had a positive view of the training program.

‘Lectures must be interactive and they must be at the student understanding level and include scenario-based activities for active learning. Students should be encouraged on asking questions by answering their every question and avoiding negative remarks.’

'Make the lecture interesting with the help of videos, and pictures, Add a small quiz in between the lecture.'

Participants enjoyed almost all areas and presentations of the course. We stimulate their thinking process by asking the question **'If you become Principal, what would be your immediate preference to address? Just emphasize two points.** They commented:

'To have a set curriculum and a flexible timetable which will be in the favor of both students and faculty Wish to have a continuous feedback process for both teaching faculty and students Wish to provide an easy platform for every faculty member to discuss his or her issues both personal and institutional.'

'I would make my institution an ideal. It will be an ideal installation for teachers, students, and parents. I shall appoint teachers who are intelligent, full of teaching skills, and devoted'.

According to the question **'Please identify two most important personal problems as a teacher.'** Though participants had a positive view, they were identifying the issues and their solutions with some of the sessions, the timing and nature of the training program, and hand-out notes of the session. They commented.

'Loss of temper with non-interested students. lack of interest in teaching for non-interested students.'

'1. Easily get disappointed when a student didn't pay attention despite my repeated and genuine efforts. 2. To engage some irresponsible students in academic activities.'

*'1. Students are keener to pass exams by hook or crook instead of gaining core knowledge
2. Lack of concentration.'*

We asked **'Please identify your own two major methods to keep your students engaged & attentive in your actual class.** The majority of participants very much appreciate the 12 Gagne events for lecturing, and they start working on it.

'Throwing questions and giving liberty to ask questions even during the talk moreover giving actual day to day examples.'

'Hands-on approach in clinical teaching. Exam-oriented techniques and mentioning exam questions keep them listening. Student interaction.'

'I keep them with me by making my session more interactive. I give them daily routine life examples to understand my subject. I also ask small questions in between.'

About the question **'please write if you have any suggestions to improve the present workshop/training.** The participants recommended putting more emphasis on small group work, suggested formulating a booklet, and shared their thoughts on where and when the workshop should be held. They made written comments.

'Small group discussion should be more encouraged.'

'Need to be more interactive.'

'Can be more improved by making practical demonstration or group work.'

Discussion:

The overall goal of this study was to evaluate the quality of the curriculum of certificate course in Medical Education through a feedback evaluation form. The evaluation was carried out by 162 participants from professors to graduates, about the elements of the course. To transfer the functional nature of the field, educational strategies are becoming more focused on the practical application of knowledge and skills. In other words, guidelines and strategies of a certificate program should be designed(7) so that achieving the overall course objectives is possible and achievable, resulting in the achievement of the bold objectives(9,10).

According to a study conducted in Africa, including Ethiopia, Many variables contribute to the lack of interest in the teaching-learning process(11). There is a lack of student-centeredness in-class presentations, lecturers do not focus on student questions during lectures, and some lecturers even avoid answering

students' questions. During lectures, some instructors simply read notes or show slides to students, avoiding any hands-on activities. Students have also expressed frustration with some instructors who have difficulty conducting classes(12).

Participants in our study claimed that the effectiveness of the teaching strategy used for the online certificate in health professions education significantly impacted their performance(8,9). Similarly, to this, a study carried out in Jordan found that students' contentment with the academic reputation, teaching strategies, and faculty had an impact on their quality of life(13). This could be as a result of the research's identical rankings for the effectiveness of their instructional strategies(5). In this study, the teachers' perspective was that pedagogical training was crucial for the faculty. As teachers' preparation and students' active engagement are indicators of excellent education, they thought that training may improve the way that courses were taught(10). Another study found that successful teaching methods, such as the use of hands-on, reduced reliance on texts, and increased levels of comfort facilitating student conversations, are positively associated with high levels of topic knowledge and mastery in lecture delivery(1,14).

The findings indicate that the program was well-received by the participants, with a high score on all assessed criteria. Incorporating multi-departmental participation was identified as a key success factor of the certificate program. The results suggest that such training programs can improve the pedagogical expertise of medical faculty, leading to better teaching, learning, and assessment methods, and ultimately producing highly skilled graduates from medical institutions.

CONCLUSION:

As presented, the results of the certificate program show that this course achieved a higher score on all assessed criteria. It indicates that one of the crucial success factors of the certificate program has been the multi-department participation. From more than 20 medical institutions all over Pakistan.

The content of the course was organized based on core competencies of teaching-learning and assessment strategies that were delivered mostly by accomplished teachers. Some problems have already been identified by the participants and facilitators. So they should be focused on small group work rather than lengthy interactive sessions.

In addition to that many participants mentioned the resource person should try to manage the time effectively. Somehow good use of time is a major issue in the conduction of the course sessions.

RECOMMENDATIONS:

Based on the findings of the online CHPE course, it is recommended;

- To ensure all faculty members have received this training, especially senior professors who are responsible for moderating test items.
- To be more practical and interested, teachers should take training every year to update knowledge as refreshing sessions.
- To make a team of resource persons from external sources especially medical educationists.

Disclosure

The authors report no conflicts of interest in this work.

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