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Program Evaluation

Col Aseem Tandon*, Col Sushil Kumar**

Abstract

Faculty development programs in medical education have received a shot in the arm after the MCI by the MCI Regulations on Graduate Medical Education, 1997, made it mandatory for all medical colleges to establish Medical Education Units (MEUs) or departments in order to enable faculty members to avail modern education technology for teaching. However, there is need for a systematic approach to comprehensively evaluate the effectiveness and the impact of these programs. The lessons learnt from such evaluation can then be suitably applied to increase the effectiveness of the program. This paper addresses this issue applied to an on-going faculty development program in medical teaching technology at the Armed Forces Medical College, (AFMC), Pune, India.

Keywords: Medical Education; Faculty Development Program.

Introduction

Faculty development programs (FDPs) are especially important in adapting faculty members to their changing roles in initiating and setting the directions for curricular changes. These programs can be a powerful tool to constitute a positive institutional climate and can range from basic orientation programs for new faculty members to postgraduate medical education programs for health professionals. Overall, the aim of all these training programs is to support medical educators in adapting to changing missions of teaching and to enhance the efficiency and performance of their teaching skills while improving work satisfaction and teaching confidence by developing good teachers (1, 2, 3, 4). It has been suggested that comprehensive FDPs should have four development components: professional, instructional, leadership, and organizational (5, 6). According to a systematic review, the majority of FDPs include workshops, seminar series, short courses, and longitudinal programs (7). Key features of effective faculty development give a high priority to experiential learning, provision of feedback, effective peer and colleague relationships, well-designed interventions in accordance with the principles of adult learning theory, and the use of diverse teaching and learning methods (7).

In light of recent developments in medical education, several medical colleges in India under their respective health universities have accepted a certificate in training skills as a criterion for academic promotion as is being followed in other countries (8). Also Faculty development programs in medical education have received impetus after the MCI by the MCI Regulations on Graduate Medical Education, 1997, made it mandatory for all medical colleges to establish Medical Education Units (MEUs) or departments in order to enable faculty members to avail modern education technology for teaching.

The faculty training program in Armed Forces Medical College, Pune, India was designed to enable faculty members to improve their skills in teaching and assessment methods. For this purpose, "Medical Teacher Training Programs in education science and technology" (MTTP) courses are organized twice a year.

The Department of Medical education has been conducting MTTP courses since 1993 and these are focused on major themes, such as identifying learning objectives, identifying the principles of adult learning, creating and maintaining a positive learning

Author's Affiliation: *Professor, **Professor & Head, Dept of Anatomy, Armed Forces Medical College Pune - 411040.

Corresponding Author: Aseem Tandon, Dept of Anatomy, AFMC, Pune-411040, India.
E-mail: aseemtandon2000@gmail.com

environment, developing and using audiovisual training tools and equipment effectively, using interactive teaching techniques in both large and small groups, making an effective demonstration, and coaching and developing competency-based skills, learning, and assessment guides comparison of the assessment methods according to objectivity, validity, and specificity; preparing and analyzing multiple-choice and essay questions; advantages and disadvantages of oral examinations and how to prepare a structured oral examination; and the use of clinical skills and methods for assessing oral examinations.. The course takes 3 days (total: 24 h) and is conducted in an interactive way, consisting of exercises for small groups with plenary discussions and brief expository lectures. On day 2 of the course, there is a microteaching session in which participants were asked to demonstrate the teaching techniques they had acquired in a presentation of their own design.

The instructors/facilitators of the courses were volunteer faculty members from the Departments of Medical Education, Anatomy, Physiology, Biochemistry and other Para clinical and clinical departments who had a specific interest in medical education and completed the required courses to become facilitators, willing to devote part of their professional time to faculty development in AFMC. This article was written to evaluate the FDP by these instructors.

Studies based on feedback of the FDPs have a unique role in guiding faculty development, since they demonstrate the impact of the FDP upon the educational experiences of the teachers, resulting in the improvement of their teaching practices [9]. The use of self-assessment as a tool enables the participants to make a conceptual integration of knowledge, skill, and attitude [10].

In general, FDPs are evaluated with diverse assessment instruments, such as pre-test/post-test, retrospective self-assessment, and independent performance ratings [7, 11]. Another type of program has been analyzed with context, input, process, and product evaluations [7]. Some studies [12,13] of faculty training programs have evaluated the opinions of participants about the efficiency of the training program. Other studies [14,15] aimed to elucidate the educational impact of the newly acquired knowledge and skills upon individual and occupational performances in the professional life of the participants.

The present study was planned as a part of the program evaluation activity. In our study we evaluated the impact of the FDP on the participants in terms of gains in knowledge, skills at the end of the program by conducting a pre and a post-test. This is thought to be important so that course content and teaching methods can be matched to faculty needs in different disciplines and at different professional levels.

Materials and Methods

The study was carried out in AFMC over a period of four years from 2011 to 2014. A total of 183

Table 1: Post workshop questionnaire

Questions	Yes	No	Not sure
1. Were the objectives of the workshop largely achieved?			
2. Do you ?nd the workshop useful for your professional activities?			
3. Did the workshop elicit your active participation?			
4. Were the Audio-Visual arrangements made during the workshop satisfactory?			
5. Do you think you will be able to implement the techniques learnt during the workshop in your practice?			
6. Were the arrangements made during the workshop satisfactory?			
7. Do you recommen d the organization of similar activity for the bene?t of your colleagues?			
8. Does the program have a balance of Theory and Practical?	Too much of Theory	Too much of practical	Optimum Theory & Practical
9. Was the time estimation satisfactory?	Program was Too tight	Program was Too relaxed	Program was Optimum
Mention sessions which were Especially found useful:			
Mention sessions which, you think, are not necessary:			

Dear Participant,

The purpose of this questionnaire is to obtain your feedback on the effectiveness of the sessions which you underwent during the workshop. Your response will help us in improving such activity in future.

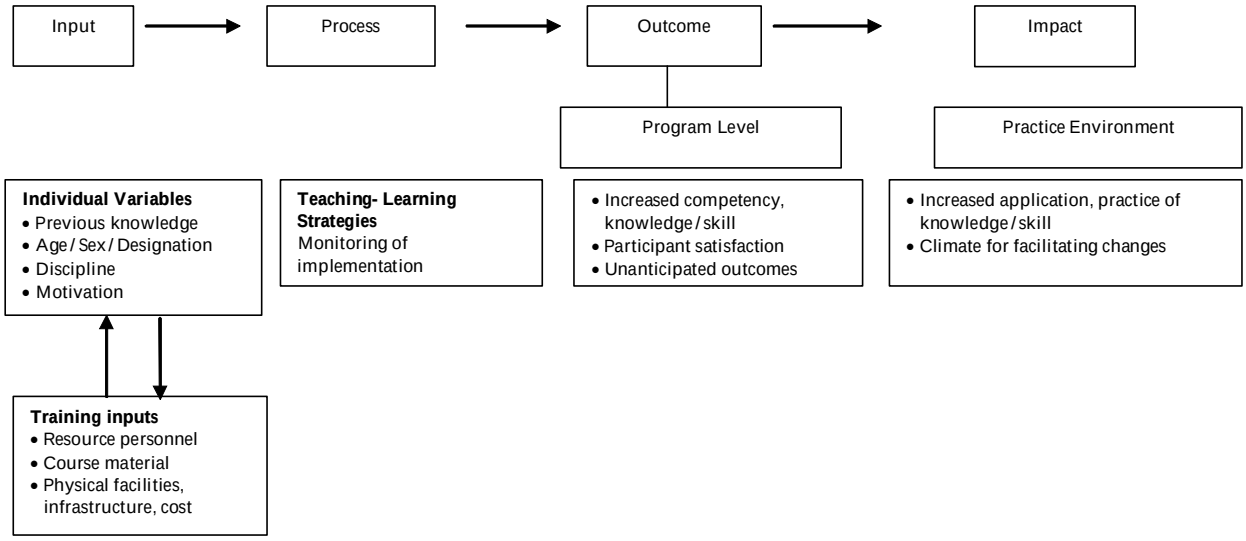
Any other Comments/Suggestions

participants spread over eight courses during this period were subjected to this evaluation. Participants of the FDP were administered a pre-test (launch pad) at the beginning of the course and a post-test (performance assessment) at the end of the course. The pre test was conducted on the first day of the programme immediately after the Opening Address. A post test comprising the same questions which were asked during the pre test (Performance assessment) was held on the penultimate day in order to assess the success of the programme In addition a *Program Evaluation Questionnaire* was administered to the participants on the last day of the course to elicit their opinion on various aspects dealing with the course (Table 1).

Results and Discussion

A program can be conceptualized as a system of interrelated components working towards the goal of producing desirable outcome, which in turn, are expected to make an impact on the practice of the participants (Table 2). The program in medical education technology is an *intervention* which is expected to produce some desirable outcome, viz., increase in the competency of participants, which in turn, would influence their day-today educational practice.

Table 2: Program in Medical Education Technology: A conceptual model



Inputs

These refer to all kinds of resources, including physical resources, technical, financial and human resources which contribute to the program. The entry behaviour of the participants (their previous knowledge, skills, disciplinary affiliation and motivation) constitutes a major input variable. Other inputs are: the quality of instructional support by the Resource persons, the relevance and the quality of the course material and infrastructure variables, viz., venue, physical facilities, audio-visual equipment, seating plan, time and cost involved in each item.

Process

This refers to a set of activities in which the inputs are utilized in pursuit of the results expected from the program. It includes implementation, monitoring and identification of the strengths and limitations, so that corrective action can be taken to improve the program. It also includes the teaching-learning strategies employed in the program including the learning climate.

Outcomes

Outcomes refer to the results obtained at the end of the program as well as after the program i.e., at the practice setting of the participants. Outcomes can be operationalized in terms of a) gains made by the participants in terms of knowledge, skills at the end of the program; b) change in the attitude of participants, and their satisfaction level; c) unanticipated outcome of the program.

Impact

Impact refers to the changes taking place in the relevant behaviour and practice of the participants which can be attributed to the intervention i.e., program. Impact measurement is done usually after a period of six months or more.

Outcome Evaluation

The main outcomes expected at the end of the program are: increase in the knowledge and skills of

the participants, increased application of educational technology, and development of educational leadership.

Pre-Test/Post-Test

The participants were administered a pre—test (launch pad) at the beginning of the program and a post—test (performance assessment) at the end to assess the relative improvement in their performance. These tests were essentially knowledge based and the comparison of result obtained is as shown in Table 3.

In the pre-test only ten participants (0.054%) were able to score above 50% marks (possibly because of some pre course training). Majority i.e. 137 (74.86%) scored less than 33% and the remainder 36 (19.67%) scored between 33-50% revealing a general low level of knowledge, awareness and understanding of commonly used terms in medical education and therefore a need to sensitize the participants about modern methods of teaching and the science and art of medical education.

After the conduct of various sessions during the program a post test (Performance assessment) comprising the same questions which were asked during the pre-test was held on the penultimate day in order to assess the success of the program. This revealed a marked improvement in the scores of all participants as shown in Table 3. Forty four participants (24.04%) secured more than 70% marks, 134 (73.22%) got between 50 – 70% and only 5 participants (0.027%) scored less than 50% marks indicating the effectiveness of the program.

In addition A *Program Evaluation Questionnaire* was administered to the participants on the last day of the workshop to elicit their opinion on various aspects dealing with the process (Table 1). The participants were encouraged to give their free and frank opinions, as their responses are held anonymous. The participants were also encouraged to give their "Informal" feedback during tea / lunch breaks, or any other free time found in between the deliberations. The valedictory session of the course includes a slot for the participants to express their views on the workshop. The data obtained from these will be compiled, analysed and utilised for a comprehensive evaluation of the program subsequently.

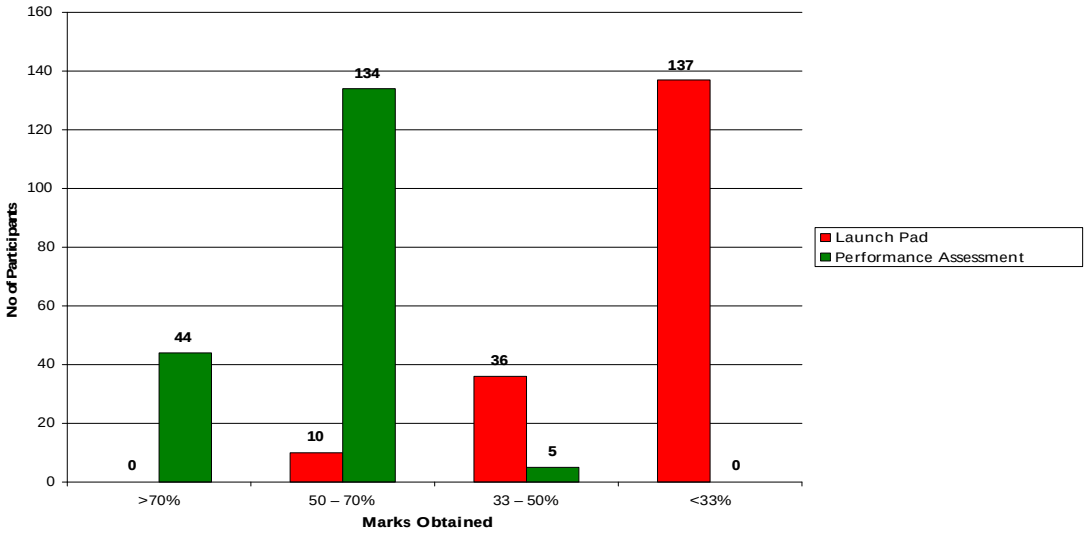


Fig. 1: Pre and post test result

Conclusion

As regards outcome evaluation, the present approach (e.g. Pre test, post test) is inadequate to measure gains in the competence, especially the skill development. In addition, "unintended''* effects are totally overlooked. Some of the unintended effects reported by the participants are: increased utilization of media services, positive interpersonal relation amongst participants, and decrease in resistance to change. Resistance to change is inherent in any organization. Resistance is linked with lack of awareness or involvement in a given activity. The participants of workshops by virtue of clear perception of the advantages of educational strategies are likely to act as "change agents".

The lessons learnt after evaluation point towards adopting a comprehensive model to evaluate the inputs, the process, the outcome and the impact, on short term and long term basis. These strategies are bound to be useful in strengthening future programs conducted by the department. At the same time, they are likely to provide a new insight into the issue of evaluation of similar programs conducted by other agencies under similar circumstances.

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