

# Effectiveness of Teachers' Training in Assessment Techniques: Participants' Perception.

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## ABSTRACT

### Background

Medical education has experienced a rapidly changing scenario especially during the past three decades. Teachers' training programs have emerged in recent years as a more in depth and comprehensive mechanisms for strengthening instructional skills and formulating assessment techniques among faculty members.

### Objective

The present study was carried out with the aim of assessing effectiveness of teacher's training workshop on assessment techniques at B.P. Koirala Institute of Health sciences (BPKIHS), Dharan, Nepal. Methods: In this prospective questionnaire based study, the 26 entry level teachers were enrolled. They were requested to fill the questionnaire before and after the workshop on the assessment techniques at BPKIHS, Dharan.

### Methods

Twenty six teachers majority of whom were entry level teachers comprising of medical, dental, nursing and allied sciences participated in pre- and post test analysis on the various components of written and oral examinations. A two and half days long training was conducted having 9 hours of teaching interactive sessions, 6 hours of group exercises, daily evaluation and 3 hours of presentation by participants. There was high degree of agreement with most topics of the assessment training.

### Results

There was a significant gain in knowledge ( $p < 0.001$ ) by the participants. All the participants (100%) agreed upon the training being informative and learned new things about assessment. More practice session with longer duration with invited resource persons were also suggested for an effective session.

### Conclusion

There is an immense opportunity for a better and comprehensive training in evaluation techniques in medical education..

## KEY WORDS

*evaluation system, faculty development, medical education, teacher training.*

## INTRODUCTION

Medical education is in constant process of change, which makes it a challenging fascinating field of the study. It is changing continuously in acceleration within the large-scale transition into the 21st century.<sup>1</sup>Therefore, to address the issues of faculty development and teacher training in the future one may start planning teacher training to meet the pace of change. For centuries teaching expertise was assumed to be a part of clinical or scientific expertise.<sup>2</sup> Faculty members were expected to be effective teachers merely by virtue of their content knowledge and mastery. Only in the second half of the 20th century has teaching

in a medical school been acknowledged as a skill which is independent of content expertise. The proliferation of teacher training programs started in late 1970s and the 1980s. At that time schools started to train their teachers through short workshops, seminars and microteaching techniques.<sup>3</sup>There is significant development of assessment in medical education during the last few decades. The progression could be traced through movement from simple to more sophisticated assessment strategies; from the use of paper and pencil tests to the use of performance and attitudinal tests.

B.P. Koirala Institute of Health Sciences (BPKIHS) being a health science university runs varieties of academic programs in different disciplines at different levels. The training/workshop was aimed at orienting teaching staff with principles of evaluations, steps, and characteristics of evaluation tools and formulation of commonly practiced assessment methods in building capacity of a teacher to acquire skills as a part of faculty development program. It was expected that trained teachers in assessment techniques will foster better learning in students and contribute to delivery of quality education including better student assessment. This paper presents the responses of trainees reflecting effectiveness of two-and half-day long training workshop in assessment techniques at BPKIHS.

## METHODS

This questionnaire-based survey was carried out in April 2007 at B.P. Koirala Institute of Health Sciences to find out the effectiveness of teachers training on assessment (student evaluation) techniques. A structured program comprised a two-and half-day long "Training of Teachers on Assessment Techniques" having nine hours of teaching interactive session supplemented by active group work of participants for six hours followed by a daily evaluation process. There was three hours of presentations by participant during the entire workshop. Resource persons were requested to prepare their deliberations well in advance. They were selected according to their previous exposure on training on specific domain of medical/health professions education. Participants were heterogeneous group of 26 teachers representing medical, dental and nursing and public health school. Prospective teachers were selected by the respective head of the departments and those previously trained faculties on the same theme were excluded from the study. Majority of participants were of entry level teachers. Objective of the workshop were provided to the participants on the first day before the supplies of pre-test questionnaire. Pre-and post-test questions were structured from various topics: existing practice of assessment at BPKIHS, introduction to evaluation, types of questions, multiple choice questions (MCQ), item analysis, objective structured practical examination(OSPE) and objective structured clinical examination (OSPE), modified essay question (MEQ), problem solving exercises, evaluation of attitude content. They were also given opportunity of plenary session at the end of the group exercise. The collected data had two categories of responses: (1) a questionnaire survey of participants at the beginning and at the end of the workshop to determine their gain in knowledge expressed in terms of score and (2) a semi-structured questionnaire survey of participants' perception at the end of workshop to evaluate their perception on usefulness of the workshop expressed in terms of qualitative open ended responses and scores. The later category had items with five-point Likert scale (strongly agree – 1, agree – 2, neutral option –

3, disagree – 4 and strongly disagree - 5) and responses to open-ended statements to document participants general views. For the analytical purpose, scale 1 and 2 were merged together (category agree), as 4 and 5 were merged and referred to as disagree while retaining the category 3 as neutral response. The responses were entered into MS Excel spreadsheet and analyzed by paired t test using Epi Info 2006 and MS Excel wherever applicable. A 'P' value of less than 0.05 was considered statistically significant.

## RESULTS

All the participants (n = 26) responded to the questionnaire distributed in pre- and post-test session as well as program evaluation. Majority of the faculty members were of entry and junior level teachers, three professors, two associate professor, 4 assistant professors and 17 senior residents/senior demonstrator. Figure. 2 shows the difference in their pre- and post-test scores. There was significant gain in knowledge following the workshop [pretest mean  $13.23 \pm 2.59$  (range 9-19) to post-test mean  $16.11 \pm 1.68$  (range 13-20),  $p < 0.001$ ]. The percentage of respondents for each level of agreement was calculated. The questionnaire statements are rearranged in table 1 and 2 to show the descending order from strong agreement. As depicted in table 1, the majority (96%) of respondents reported that they had a better understanding of opportunities and limitation of assessment. All the participants (100%) reported that the training on assessment was informative. Only 61% of the participants agreed that their personal goal had been met by the program. All the participants reported that they had learnt new thing about assessment and increased their interest in assessment techniques. They opined that the opportunity to ask question was sufficient (88%), the pace for information was adequate (73%).

The participants expressed high degree of agreement with most topics of the assessment training/ workshop (Table 2). They expressed their agreement in existing practice of assessment (88%), definition, purpose and methods of evaluation (88%), short answer, problem based and essay type question (88%), MCQ- introduction, parts, and types (100%), item analysis (96%), OSPE/OSCE (92%), MEQ/ problem solving exercise (96%), evaluation of attitude (84%), oral examination/ significance of viva (96%), group exercise (96%).

In general, participants were very positive about assessment workshop (Table 3). They found that the training objectives were clear and duration of training was adequate (76%).

In response to the open-ended questions, majority of participants expressed such type of training is needed for developing assessment tools and stressed for shorter session with long duration either before or after lunch break. They also suggested having more practice sessions for commonly practiced assessment tools. It was also pointed out that some participants and a few resource

**Table 1. Participants' views on accomplishment of goals of assessment workshop.**

Topics	Agree n(%)	Neutral option n(%)	Disagree n(%)
The training was informative	26 (100%)	-	-
I have learned new things about assessment	26 (100%)	-	-
There was sufficient opportunity for participants interactions	26 (100%)	-	-
Now, I have a better understanding of the opportunities and limitation of assessment	25 (96.15%)	1 (3.84%)	-
I experienced a pleasant working atmosphere during training	24 (92.30)	2(7.6%)	-
The training has increased my interest in assessment	24 (92.30)	2(7.6%)	-
There was sufficient opportunity to ask questions	23 (88.46%)	3 (11.53%)	-
The organization was adequate	21 (80.76%)	4 (15.38%)	1 (3.84%)
There was sufficient variation in topics during training	19 (73.07%)	7 (26.92%)	-
The pace in which the information was provided was adequate	19 (73.07%)	7 (26.92%)	-
The personal goals I had for this training was met	16 (61.53%)	9 (34.61%)	1 (3.84%)

**Table 2. Participants' views on relevance of different headings/topics of assessment workshop.**

S. no.	Topics	Agree n(%)	Neutral option n(%)	Disagree n(%)
1	MCQ- Introduction, parts and types	26 (100%)	-	-
2	Item analysis	25 (96.15%)	-	1 (3.84%)
3	MEQ/ Problem solving Exercise	25 (96.15%)	-	1 (3.84%)
4	Oral examination/ Significance of viva-voce	25 (96.15%)	-	1 (3.84%)
5	Group exercise	25 (96.15%)	-	1 (3.84%)
6	OSPE/OSCE	24 (92.30%)	1 (3.84%)	1 (3.84%)
7	Definition, Purpose and methods of evaluation	23 (88.46%)	3 (11.53%)	-
8	Short answer, Problem based and essay type question	23 (88.46%)	2(7.6%)	1 (3.84%)
9	Evaluation of attitude	22 (84.61%)	4 (15.38%)	-
10	Existing practice of Assessment in BPKIHS	21 (80.76%)	5 (19.23%)	-

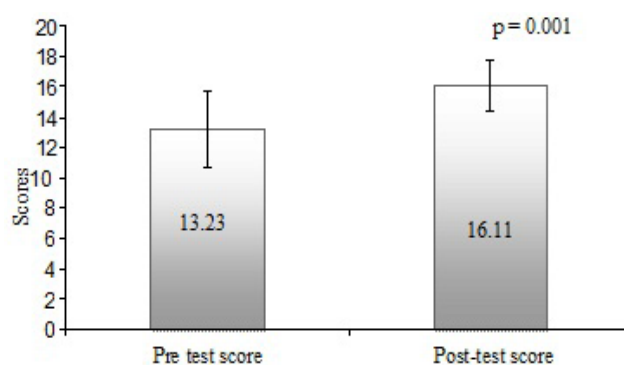
**Table 3. Participants' views on workshop's clarity and its duration adequacy.**

Topics	Participants Perception
Training Objectives	
Very clear	12 (46.2%)
Clear	12 (46.2%)
Not Clear	2 (7.7%)
Duration of Training	
Adequate	20 (76.9%)
Too long	4 (15.4%)
Too Short	2 (7.7%)

persons should also be invited from other medical institutions.

## DISCUSSION

The quality of medical education is determined by teachers, students and the curriculum and of these the former has received least attention.<sup>4</sup> Ramilingaswami states that: The problem in medical education is not ability of students to learn as the ability of teaching to facilitate learning.<sup>5</sup> Medical schools have been encouraged to emphasize teaching abilities when recruiting and promoting staff

**Figure 2. Pre-test and post-test score of the participants.**

and to help existing staff to become better teachers<sup>6</sup>. The training in entry level teacher's professional being a critical point in new teacher's professional development. The aim of the present study was to the effectiveness teachers training on assessment technique participants' perception. In the ideal situation when evaluating training, one would participants to be able to see a real difference between their performance at the beginning and at the end. The evaluation in this study is more modest and relates to the training course objectives being fulfilled in the immediate short term. Clearly, participants do feel more confident at the end of this course.

It has been established that the mode of assessment influences the learning style of students (assessment drives learning) and it has been shown that medical students are susceptible to this influence.<sup>7</sup> Assessment is one of the important components of educational spiral. Overall, the result of the study shows that the assessment training is acceptable to trainee. For all questions most participants made supportive response. The perception of teacher in regent to training has been relevant and useful as evident from their feedbacks (table 1, 2 and 3). Taking the response on assessment method or tool, participants have been able to demonstrated improvement in use of OSPE, OSCE etc. Taking the response with highest percent from agreeable to disagreeable to each item, the entire participants (100%) agreed upon the training being informative and learned new things about assessment but only about 62% agreed that their personal goals were met during the training. All the participants agreed that there were sufficient opportunities for interaction among participants during the training.

Participants suggested for holding similar training for reinforcement with increase in the duration of training. Some participants also suggested for change in the current topics/ headings. In addition they also suggested for the involvement of other participants and resource persons from different medical institutions so that the diversity in curriculum and methods of evaluations could be discussed.

## CONCLUSION

Overall, our result confirms that the current training package is feasible, acceptable and useful for teachers with possible reinforcement. However, follow up and impact study of such training is still to be evaluated in future.

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