

SHORT ARTICLE

Effectiveness of a 'Short training in Teaching Methodology' for entry level Medical Teachers

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Abstract

Background: Teacher education curricula should enable teachers to facilitate learners' acquiring knowledge, attitudes, behavior and skills that they will need in their profession. Though there are faculty development programmes that are being conducted in India, there are only a few published reports of the same. **Aims & Objectives:** To assess the "Effectiveness of a Short training in Teaching Methodology for entry level Medical Teachers." **Settings and Design:** A quasi-experimental study with pre-test post-test design and an educational intervention was carried out on 30 consenting Senior Residents at a Medical College in Kochi. **Material & Methods:** The intervention was eight-hour training in teaching methodology using a curriculum designed by the researcher in consultation with experts. Data analysis was done using SPSS software to compare the pre and post - test scores of the residents. **Results:** Overall feedback was positive. The participants reported that "they had learned a lot" and were of the view that "the course would help them to put forward better performances" when assigned teaching-learning tasks. The pre-test and post-test scores were compared and significant improvement was found with regard to knowledge, motivation to teach (reflecting attitude change) and practice. **Conclusion:** A short training in teaching methodology has helped entry level medical teachers to become more effective in their teaching.

Keywords

Effectiveness; short training; medical education; teaching methodology; entry level teachers.

Introduction

Prospective teachers need knowledge, attitude, behavior and skills to accomplish their assignment efficiently. The policies and procedures designed for the same are together referred to as 'teacher education'. (1) Initial teacher education also known as Pre- service Teacher Training usually takes place in institutions of higher education in many countries,

when general (not professional) education is considered. However, it is not usually a practice for medical teachers.

Teacher training may be considered in two models - In the 'consecutive' model, a teacher first attains an eligibility in one or more disciplines (generally a Bachelor's degree), and after an extra period of study, earns an appended qualification in teaching.

This would mean that doctors should finish their graduation or post-graduation, and later pursue an additional qualification in Education like the B.Ed/ M.Ed.

In the alternate 'concurrent' model, a student synchronously studies both - one or more academic subjects and the manner of teaching that subject, resulting in a combined Bachelor's degree and teaching certificate, equipping the person as a teacher of that subject. In the case of medical teachers in India, this is what happens or is presumed to happen.

The Medical Council does specify the years of teaching experience mandated for each cadre and now has detailed plans in place for faculty development. (2) The curriculum should empower the teachers to facilitate the learner's acquirement of the pivotal knowledge, attitudes, demeanour and skills that is required in their profession.

Generally, teacher curricula are divided into (4) major areas:

- Foundational knowledge in education – related aspects of philosophy of education, history of education, educational psychology and sociology of education.
- Skills in assessing student learning, using technology to upgrade teaching and learning and aiding students with unique needs.
- Content and methods – the basic content for the curriculum of doctors, both undergraduate and specialty training is known. Therefore, the focus is on learning how to facilitate learning.
- Practice at class room teaching or other methods of educational practice - usually guided and supported in some manner. However, that is not the case always. Practice can be under the observance of senior teachers, student teaching jobs under a guide or internship. Rational and logical structure of training can help reduce the struggle of learning (to teach) and decrease attrition of new teachers. (3) The increasing need for "Teacher research" is a point that needs attention. (4)

Aims & Objectives

To assess the "Effectiveness of a Short training in Teaching Methodology for entry level Medical Teachers."

Material & Methods

Study Design: The design was a Quasi-experimental study, with pre-test, post-test design and

educational intervention. **Study setting:** A private medical college hospital in Kerala was the study setting. The college has been functional since 1998 and started its undergraduate programme in 2002, post graduate programmes in 2008 and super specialty programme in 2009. At present it has post graduate programmes in all specialties with an annual intake of 95 Junior and 35 Senior residents. (Junior residents are those who join for their post graduate training (MD, MS), and students who enroll for super specialty training (DM, MCH) are the senior residents.) **Study population:** The latest batch of Senior residents of the Medical College. **Exclusion criteria:** Residents who declined to participate in the study. **Study Duration:** 3 months (July – September 2015). **Sample size and Sampling Technique:** All the consenting senior residents, 30 in total, underwent a short training in Teaching Methodology. **Intervention:** A pre-test was done using an item-analyzed, self-administered set of questions to assess the cognitive, affective and psycho-motor components of the Teaching - Learning process. The educational intervention was a curriculum. It was designed by the investigator after deliberation with specialists. ([Table 1](#))

It was used to impart to the residents, the knowledge, motivation to teach (reflecting attitude change) and skills they require to carry out their routine teaching assignments. A feedback was taken from the residents immediately after the training which was a qualitative description of their reaction to the training. A post-test was done using the same questions as the pre-test, 1 week after the intervention. **Data Analysis:** Was done using SPSS software to compare the pre and post - test scores of the residents. The feedback was also analyzed for qualitative details. **Ethical Consideration:** Ethical clearance was obtained from the Institutional Review Board. Consent was obtained from all the participants of the study.

Results

The questions used for pre and post-tests were the same. It comprised of a set of questions dealing with knowledge, motivation to teach and practice components. The knowledge questions covered the various aspects of the Teaching-Learning methodology. Questions to assess motivation were framed in a manner to help elicit graded response using a Likert scale. The participants were already taking Teaching-Learning sessions for the

undergraduate students and so a few practice related questions were also included. Special attention was paid to include only those questions from the topics mentioned in the curriculum. Scoring was done by the researcher using pre-prepared keys. There was improvement in scores for knowledge (Figure 1), motivation to teach (Figure 2) and practice (Figure 3).

'Paired t test' showed that the difference in the pre and post test scores was statistically significant (Table 2).

Learning evaluation was done only in Kirkpatrick's levels 1 and 2. (5)

Feedback was taken from the participants to ascertain their reaction to the programme. Overall feedback was very positive. The participants reported that they had "learned a lot" and were of the view that "the 'course' would help them to put forward better performances" when assigned teaching - learning tasks.

Discussion

In a faculty development programme in family medicine by Bland *et al*, (6) positive improvements were seen in knowledge following an intervention. The same was noted in a similar programme for family physicians by Sheet *et al*. (7) A gain in knowledge was demonstrated in fellowship programmes by Johnson *et al*. (8) A programme comprising of seminars was also successful in increasing participant's knowledge on teaching skills in medical education, as reported by De Witt *et al*. (9) In the current study, significant improvement in the knowledge of the participating doctors showed significant improvement in the knowledge domain. Increased positive attitudes to learner-centered learning was reported by Pololi *et al*. (10) after a 3 days' course for medical school faculty from clinical departments. This was similar to the findings by Gordon *et al*. (11) who however also reported that the attitude scores decreased in the delayed post - test. Positive changes in attitudes and perceptions were seen in a national dissemination programme to improve clinical teaching, as reported by Skeff *et al*. (12) and also in a study by Rawar *et al* (13) based on a staff-development unit programme of a hospital. Longitudinal programmes by Elliot *et al* (14) and Johnson *et al* (8) also revealed similar changes. Significant improvement in motivation to teach was found in this study as well. In studies that assessed knowledge and skills by Bland *et al*, (6) DeWitt *et al*

(9) and Hewson *et al*, (15) positive results were seen as in this study. A systematic review of faculty development initiatives by Steinert *et al* (16) states that the participants showed improved attitudes due to the interventions. They reported greater realization of personal strengths and inhibitions and also increased motivation and eagerness for teaching. The benefits of professional development were also well appreciated. They also reported increased knowledge of educational concepts and principles as well as various aspects of teaching and also gain in skills. These findings are in keeping with the results of this study. There are very few reported studies on the effectiveness of teacher education / faculty development, done in India. Adkoli BV *et al* (17) have suggested various tools for assessment of faculty development programmes in their publication on evaluability. Nagdeo NV *et al* (18) in a descriptive study found that 46.34 - 51.21% of participants benefitted from various topics and 51% benefitted from being able to use audiovisual tools effectively; a significant number of participants made changes in their teaching techniques after attending the workshop.

Conclusion

The effectiveness of a short, eight-hour course in teaching methodology given to a new batch of senior residents of our institute has been proved and there was significant improvement in their learning in all domains as per the results obtained in this quasi - experimental study. This study is evidence to the fact that all doctors who are called upon to participate in teaching - learning activities, will do well with a brief course in teaching methodology before they start involving themselves in teaching. This will be appreciated by the new teachers and definitely will aid in their delivery of good quality teaching. And this in turn will benefit the learners also. However, this should only be a beginning of efforts to develop their knowledge, motivation to teach and practice and should continue throughout their career.

Recommendation

It may be a good strategy to provide a pre-service course focusing on teaching methodology to entry level medical teachers. The effort will be well appreciated by the young teachers and will definitely be effective in improving their knowledge, motivation to teach and practice (behaviour and skills) and this will be evidenced by their better performance as teachers. The faculty development

programmes in India generally do not include the residents. However, in practice they have an active role in the teaching-learning activities of all departments. To be left to learn the art and science of teaching by themselves, by trial and error, cannot be recommended indeed. As a beginning, this deficiency can perhaps be overcome to some extent at least, by giving these teachers or facilitators a brief pre-service course in teaching methodology. This study has found that a short, eight-hour course has helped significantly. After studies involving larger number of participants, it could be suggested to regulatory bodies that pre-service short courses in teaching methodology be made mandatory in all medical schools, as they will be effective in improving both teaching and learning. Of course, this will be of maximum benefit to those who choose to work in teaching institutions.

Limitation of the study

1. The evaluation of learning had to be limited to Kirkpatrick’s training and learning evaluation levels 1 & 2.
2. Due to constraints in the study setting the number of participants were limited.

Relevance of the study

A short training in teaching methodology for entry level medical teachers can help them become more effective in their teaching.

Authors Contribution

All the authors had made substantial contributions to conception, design, data collection, analysis and interpretation of data; drafting the article, revising it critically for important intellectual content; and final approval of the version to be published.

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Tables

TABLE 1 COURSE CONTENT - EFFECTIVENESS OF A SHORT TRAINING IN TEACHING METHODOLOGY FOR ENTRY LEVEL TEACHERS

S No	Topic
1.	Course Orientation
2.	Pre test
3.	Medical Education as a system – systems approach, Teaching Learning Process, Principles of Adult Learning, Pedagogy vs Androgogy, Self-directed learning and Motivation
4.	Domains of learning, Educational Objectives & Taxonomy of Learning

5.	Practical session on Educational objectives & Taxonomy of learning
6.	Introduction to Microteaching & microteaching evaluation
7.	Principles of curriculum development and evaluation, Curricular innovations, Curricular Implementation Support Programme
8.	Interactive Teaching Learning Methods – The Lecture
9.	Group Discussion
10.	Interactive Teaching Learning Methods –Seminar, symposium, panel discussion, project based lased, problem based learning etc.
11.	Microteaching
12.	Clinical Teaching (including bed side teaching)
13.	Teaching aids (Group activity) – Chalkboard, OHP, LCD projector, Flip charts, Telemedicine
14.	OMP (including role play)
15.	Feedback
16.	Post Test

* The programme was organized as discussions with demonstration

TABLE 2 KNOWLEDGE, MOTIVATION TO TEACH, AND PRACTICE SCORES OF PRE- TEST AND POST-TEST

	PRE MEAN(SD)	POST MEAN(SD)	p VALUE
KNOWLEDGE	2.17(1.17)	7.37(2.39)	<0.001
MOTIVATION TO TEACH	2.03(1.69)	2.67(1.74)	0.01
PRACTICE	0.73(0.78)	1.6(0.93)	<0.001

Figures

FIGURE 1 PRE AND POST-TEST SCORES (KNOWLEDGE – ‘K’)

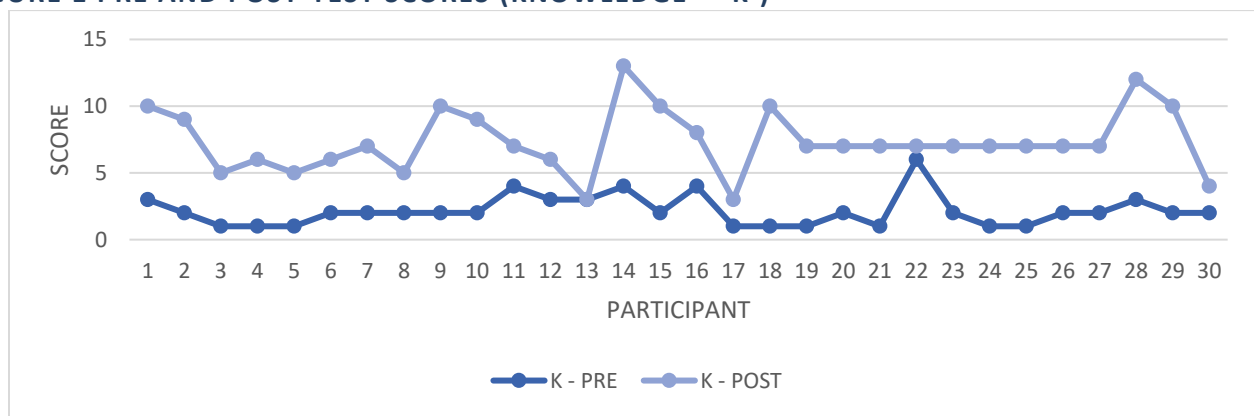


FIGURE 2 PRE AND POST TEST SCORES (MOTIVATION TO TEACH – ‘A’)

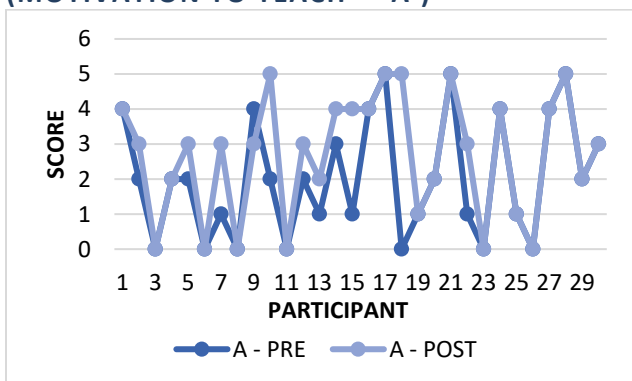


FIGURE 3 PRE AND POST TEST SCORES (PRACTICE – ‘P’)

