

Innovative Teaching Learning Methods for Health Professional Educators – Experiences Shared by Participants during an Online Learning Forum

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Abstract

Background: There is a need to introduce self-styled innovative teaching learning (TL) methods to make class room or bed side teaching more interesting for medical graduates.

Methods: This research work show cases the experience shared by 26 FAIMER fellows who participated in a Mentor-Learner (ML) web discussion on self-styled innovative TL methods. Self-styled TL methods conducted earlier either in large or small group setting were shared by the participants.

Results: Self-styled T-L methods in the large group settings involved group activities and usage of different teaching modalities. It improved the attention span of students. Self-styled T-L methods implemented in the small group settings improved group discussion. Students felt benefitted by learning from one another. These sessions helped in better retention of facts and the setting favoured easier clarification of doubts from the facilitators. Assessment methods were used more in small compared to large group settings. Challenges involved during preparatory stage and inability to bring about universal student participation during implementation stage of various suggested methods were experienced by most facilitators in both types of setting. Majority of the methods could not touch beyond the “Cognition” component of the Miller’s Pyramid of Assessment.

Conclusion: Effective implementation of self-styled methods require good pre-planning and a well-supported feedback/evaluation process during the post implementation phase. It is also recommended to introduce innovative TL methods which strengthens the “Behaviour” component of the Miller’s Pyramid of Assessment at various teaching institutions.

Keywords: Self-styled innovative teaching learning methods, Mentor-Learner web discussion, Experience sharing

Introduction

Medical schools need to periodically update their teaching learning (TL) methodologies so as to ensure that classroom TL experience is an interesting experience for the students. In order to avoid the learning experiences in classrooms from becoming monotonous, there is a need to redefine it by introducing innovative TL methods.

This would further validate the principle of learning and reaffirm that students learn best

when they see, listen, and do an activity simultaneously.

There is a need to tap information on several such innovative TL methods implemented by academicians during their teaching experiences so as to replicate the same at various professional colleges.

Listserv based discussions serve an excellent platform for discussion on innovative TL methods and other important issues

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concerning medical education among academicians placed in different parts of the world. This research work is the scholarly report of one such discussion on experience

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sharing of self-styled TL methods by the participants.

Methods

These asynchronous online discussions took place using the listserv hosted by PSG FAIMER Regional Institute, Coimbatore, India. It was held in 2015 during the last week of December. The participants were of a varied background i.e. from Medical, Dental, Nursing and Physiotherapy sciences based in India and abroad. They were invited to share their experiences, perceived benefits and challenges, regarding any self-styled innovative TL methods implemented by them, in large or small group setting in the past. Participants were given the opportunity to share from others' (colleagues/ friends) experiences too.

Identification of the immediate learning needs of learners just prior to the start of the discussion was done using survey monkey. Even questions on perceived barriers in relation to the topic of discussion was part of the survey. This was found to benefit participants in a previous online discussion moderated by Dongre *et al.*, (2010).

The moderators had a separate channel of communication using WhatsApp. The key challenge in ML web discussion was to maintain an optimum level of online participation. Therefore to encourage active participation in this web discussion, the moderators sent frequent reminders through phones and emails to the non-participants.

To maintain the enthusiasm of the participants and to encourage their contribution throughout, a case scenario with fictitious names were framed in the present web discussion, as also done by Ladhani *et al.*, (2011) in a previous online discussion.

Results

A total of 26 participants took part and a total of 103 mails related to the topic of discussion were posted in the listserv during the week.

The various self-styled TL methods narrated by the participants is presented in Table 1.

Majority of the self-styled large group TL methods involved usage of multiple teaching modalities and multiple activities, with the aim of increasing attention span of the students.

The multiple teaching modalities which were used were videos, power point slides and flash cards. The multiple activities involved case based learning, open book evaluation, framing of problem based reasoning type of short answer questions and solving of picture based case scenario stems by the students. However, a common challenge faced by the facilitators, in spite of using multiple activities in sequence during large group teaching was, inability to involve all the participants. Moreover ensuring availability of teaching aids like video lectures for all the topics and of flash cards for all the students, required good amount of preparation during the pre-implementation stage. Assessment methods were observed to be minimal in large group setting. Another important drawback of these large group TL methods were that it could not touch beyond the "Knows" and "Knows how" level of the Miller's Pyramid of Assessment.

Majority of the self-styled TL methods in small group setting were directed towards integrated teaching of basic sciences with clinical and applied sciences. Factors which favoured learning process in this setting was learning from one another, better clarification of doubts from the facilitators and better retention of concepts. Few of these small group TL methods touched the "Shows how" level of Miller's Pyramid of Assessment. This included "Triangular model" to teach Anatomy and "Role play in Orthopaedics". Only two models namely, "Integrated teaching with early patient encounters" and its reverse model touched the "Does" level of Miller's Pyramid of Assessment by involving real patient for teaching medical undergraduates. Challenges identified with respect to prior preparations in small group setting were, in areas such as, faculty coordination, patient availability, drafting of case scenarios and framing suitable questions. Moreover in small group teaching, requirement of prior preparation by the participants for the exercise, played a crucial role in the success of the model.

For active participation of silent students and for further improvisation of any newly implemented T-L method, taking feedback from students soon after the session was suggested by few fellows. This along with private conversation and counselling were the other suggested remedies for helping demotivated students.

Table 1: Self-styled teaching learning (TL) methods implemented by participants in large and small group settings

Large group setting							
Name of TL method suggested by the participant	Type of activity/ Setting/ Learning domains	Target audience/ Group characteristic/ Time allotted	Methodology	Evaluation process	Perceived benefits of the method	Perceived challenges in the method	Remedial measures suggested during the discussion
Hybrid tutorial	Tutorials, Cognitive and Affective	125 MBBS students, 1 tutor, 1 hour	Row wise division of tutorial sub-topics, students to write answers in note book, discuss answer with their neighbours, read book to find the right answer, a randomly chosen student from each row to take part in a CBL session. CBL question was projected on a power point slide for the benefit of the audience. One randomly chosen CBL participant to present solution to the entire class.	Nil	Students actively involved throughout. Improved their attention span. Usage of several innovative TL methods made the class interesting.	Noise generated during paired discussions.	No discussion, only exchange of note books for correcting one another's answers.
Flash cards	Theory class, Cognitive	200 MBBS students or 75 Paediatric Post graduates, 1 tutor, 1 hour	Students have to display card depicting clarity with the topic taught when asked by the faculty, at any point in the class – fully clear (green card), somewhat clear (yellow card), not clear (red card)	Card based quiz at the end – “yes” to an answer (green card), “not sure” to an answer (yellow card), “no” to an answer (red card)	Low cost technology Gives periodic check of students' understanding of the lecture.	Coloured cards were laborious to prepare and distribute to all. Few responses might have been triggered seeing others' responses.	Use of clickers instead of flash cards.
Not suggested	Tutorials, Cognitive	150 MBBS students, 1 tutor, 1 hour	Video lecture followed by didactic lecture on the same topic the very next day for 75 students of study group.	Class test conducted for both study group and control group.	Performance in class test was significantly better in the study group.	Video lectures were not available for all the theory topics.	Nil

			Only didactic lecture and no video lecture for 75 students of control group.	Process evaluation feedback taken in study group.	Positive feedback of the process was given by the students. Doubts in video lecture could be clarified during didactic lecture.	
Not suggested	Tutorials, Cognitive and Affective	60 MBBS students divided into groups of 5 each, 1 tutor, 1 hour	Framing of problem based reasoning type of short answer questions by groups by referring to the text book. Followed by inter group questioning and answering session.	Nil	Students were involved throughout the class. Healthy inter group competition to foster each other's learning.	Few students were silent spectators to the proceedings. Time constraints. Facilitators in between need to ask questions to the students. This would encourage participation from silent students.
Not suggested	Theory class, Cognitive and Affective	90 BDS students, 1 tutor, 1 hour Students divided into 10 sub-groups	Topic given 1 week before for preparation. Session starts with tutor asking a question related to the topic and a randomly chosen member from every sub-group to contribute one answer to be written on the board. Pauses introduced to give students time to recollect and say answers The entire cycle repeats over 20 minutes with more questions. Each sub-group to prepare a two slide quick power point presentation to summarise the discussions. (15 minutes) Any member of a randomly chosen sub-group to make the presentation to	Every participant towards the end has to answer to a case scenario related to the topic discussed.	Group activity kept students busy throughout. Multiple modalities helped to stimulate learning process among them. Better retention of information was observed.	There were few students who did not actively participate. Obtaining feedback from all participants might help to identify possible reasons for minimal participation among few students.

			the entire class. (5 minutes)				
			Finally pictures with case scenario stems were given to each of the students to answer independently without any discussion. (20 minutes)				
Open book self-evaluation of answer scripts	Cognitive	MBBS students, 1 hour	Written examination	Open book self-evaluation of answer scripts by the students after the exam. Students were instructed to add comments regarding missed points against each answer.	Helped students to identify questions they need to prepare better.	Cannot be repeated every time as the seriousness of the examination procedure will be lost. Marks obtained in the examination cannot be used for assessment purposes.	Nil
Small group setting							
Triangular model	Dissection hall, Cognitive and Psychomotor	20 MBBS students, 1 tutor, 2 hours	Didactic lecture by tutor using a writing board fitted against the dissection table, followed by display of power point slides using the laptop on case scenarios related to applied Anatomy and demonstration of the relevant Anatomy in the cadaver/specimen by the tutor.	More case based exercises in applied Anatomy were solved by the students at the end.	Training based on CBME guidelines. More attention for slow learners. Easier for students to interact and clarify doubts.	Some faculty members did not cooperate for the implementation of this model.	Nil
Role play in Orthopaedics	Clinical postings in Orthopaedics, Cognitive and Psychomotor	20 MBBS students, 1 tutor, 30 minutes	Students grouped themselves into pairs to palpate bony land marks and to elicit joint movements of one another.	Nil	Good understanding of the bony land marks and joint movements in relation to human Anatomy.	Anatomical knowledge of most students was inadequate. Female students in this role play had issues concerning privacy.	Prior reading of relevant Anatomy.

Round table brainstorming technique	Tutorials, Cognitive	9 MSc Nursing PG students, 1 tutor, 30 minutes	Students seated in a circular manner. The tutor starts by asking a question. Students are then given 5 minutes time to prepare the answers. A paper sheet is then circulated. Each student to say aloud one answer before writing the same in the sheet. The sheet is then passed on to the adjacent student till all get a chance.	Nil	All possible answers to a question were discussed. Balanced student participation and stimulation for learning among the slow learners were ensured.	Selection of a suitable question with multiple answers is required. Few misleading discussions took place during the session.	Nil
Not suggested	Tutorials, Cognitive and Affective	20 MBBS students, 1 tutor, 2.5 hours in classroom setting	Didactic lecture by the tutor for 1 hour followed by distribution of 6 public health scenarios. Later 3 days' time given for literature search and to prepare research question in PICO format. Then brainstorming session on the searched resources for 30 minutes followed by presentation session of evidence pertaining to each public health scenario using AV aids for 1 hour.	Students' attitude, group work and presentation skills were assessed.	Best solution or evidence available currently for each scenario was identified using this model.	Participation was inadequate among few students. Repeat of scenarios given to the previous batch led to copy of the answers in the subsequent batches.	Random selection of presenters. Framing different scenarios for every new batch. Written assessment exam at the end.
Integrated teaching with early patient encounters	Tutorials, Cognitive, Affective and Psychomotor	25 MBBS students, 1 teacher from each of the 3 pre-clinical subjects, 1 clinician, 3 hours	Bed side case study on a selected disease in the hospital. Visit to laboratory to show biochemical procedures. The disease topic divided into three subtopics related to the basic science subjects. Entire student group to prepare power point slides for the three sub topics under the guidance of the respective basic science faculties.	Nil	Patient encounter at the start gave stimulus for learning further about the topic. Integrated teaching helped in better understanding of the concepts. Doubts of students were better clarified due to the presence of	Patient encounter not always possible because of lack of hospital admissions. To establish coordination among the 4 faculty members from different departments was difficult.	Sessions to be timed based on patient availability.

			Power point presentation by any randomly chosen student to the entire class and to all the 4 faculty members followed by a discussion towards the end.		multiple subject experts in a single setting. Students were busy and involved throughout.		
Not suggested	Tutorials, Cognitive, Affective and Psychomotor	25 MBBS students, 2 basic science faculties, 1 clinician, 3 hours	Didactic lectures 30 minutes in Anatomy and 30 minutes in Physiology, followed by bedside teaching in the hospital for 30 minutes.	MCQs, SAQs, OSCE for a total of 1 hour. Feedback of learning experience over 30 minutes.	Active participation in learning throughout. Retention of basic science concepts was better. This integrated teaching model ensured better clarity of the topic among the students.	Time constraints. Patient availability.	When patients' with the concerned morbidity are unavailable in the hospitals, video recording of patient consultant interaction could be a useful alternative.
Not suggested	Clinical postings, Affective and Psychomotor	Physiotherapy under graduate students, Physical medicine residents	During their first week of training they were instructed to use mobility aids for locomotion.	Nil	Beautiful strategy to teach empathy. Helped them in career building process.	Nil	Nil

Discussion

The collective and collaborative learning opportunities offered through this discussion might have helped the participating fellows in framing newer innovative TL methods at their respective institutes. However it was observed that only few methods could go beyond the "Cognition" component of the Miller's Pyramid of Assessment. To touch the "Behaviour" component under Miller's Pyramid of Assessment, it is necessary to introduce TL methods at teaching institutions which strengthens the "Shows How" and "Does" levels.

Competency based medical education (CBME) in the recently revised medical curriculum by the Medical Council of India (2017) supports the need to introduce more such innovative TL methods in medical education.

Conclusion

The various self-styled TL methods implemented by the participants addressed several shortcomings in the current medical education system. However, effective implementation of self-styled methods require good pre-planning and a well-supported feedback/evaluation process during the post implementation phase. It is also recommended to introduce innovative TL methods which strengthen the "Shows How" and "Does" levels under "Behaviour" component of the Miller's Pyramid of Assessment at various teaching institutions.

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