



Research in teaching: what it means to an academic physician

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The future of practice of medicine rests with how we shape up academic medicine. This needs induction of scientifically minded enthusiasts amongst the student community to join this profession and become future academic physicians. These academic physicians can become role models for medical students to join medical institutions as teachers and future academic physicians. This important aspect of practice of medicine has been overlooked in recent years in developing countries, which are producing more community physicians than academic physicians. The key role of academic physicians is that of a medical educator on whom depends the quality of future community physicians. The current trend suggest that if students were allowed to reflect on their personal development plans and motives to join medicine, majority would share the idea of training themselves in broader range of clinical problems and only few will like to choose their career as medical researcher or educator. However, an environment, which is conducive for the practice of medical education as a discipline can bring a change in present trend of training. This will enable us to attract medical students towards teaching and become educators in future. All we need is to provide them with role models and hands on experience in research on medical teaching and learning. They can be motivated to play an active role in educating others. The present trend of community based medical education in undergraduate curriculum, which gives more ownership to students as partners in delivery of health care can be utilized as an early step in students' training towards research. This can provide us with an ideal platform to promote the culture of research in medical education among students who start their first assignment with collection of epidemiological data at the level of a small community. If these opportunities in medical practice are not explored, the fear is that we might end up with a dearth of medical educators as academic physicians in medical institutions in future.

We must also look at how the medical students view the research in medicine in general and research in medical teaching in particular. The present learning and teaching strategies adopted

in curriculum practiced in developing world, is more inclined towards discipline based formal lectures throughout the five years. And the same teaching trend is practiced in case of PBL curriculum after the preclinical phase in year 3 onwards. This is not adequate to promote analytic critical reasoning in clinical practice as a stimulus for the brainstorming of prior knowledge. This approach lacks incentives for students to adopt self-directed learning to explore scientific advancements in medicine and health sciences. Medical students through their curriculum must be introduced to this important aspect of medicine as research and teaching is essential to produce academic physicians in medical schools from undergraduate to postgraduate level. Faculty should practice to groom students to probe research questions and research projects. Merely mentioning the need for research in curriculum will not promote the culture of research in teaching and learning in medical education. Our present policy in developing world though emphasizes the need for research in undergraduate medical education but in practice it often emphasizes on clinical service alone. Teaching and research is often set aside and become passive in institutional delivery of medical education. Faculty members often do not play the role of a model educator because of their clinical practice entirely focused on patient care and private practice in many instances. Constraints to allow this practice in most of the cases are to compensate for low salaries in public sectors. However, this might be the major reason why senior faculty members inclusive of chairpersons of clinical disciplines either find it difficult to spare time for research in teaching or they face the problem of funding required to carry out research in this field.

Provision of funds is one of the most important issue in research and teaching in developing world. The economic downfall in most of these countries, except few has widened the gap between academic physicians and community practice. Even those holding the academic physician's posts in institutions are virtually practicing as community physicians that overwhelm their roles of researchers and educators in teaching institutions. Continuing

education is a distinctive pursuit and essential aspect of a physician in medical institutions, which ultimately aims to promote good clinical practice. How to overcome the problem of funding in research for medical education needs consideration for it is difficult to find a sponsor, like one finds in clinical research (clinical trials). To address this problem one might have to look for government's funds in public sector or philanthropist in private sector.

The institutions investing in medical education should not spend money to improve faculty member's capabilities in research of medical sciences and clinical services only. Investments must also be made to improve their teaching abilities as well. As far as the area of research in medical education is concerned, the field is wide open for practice provided we show our interest in teaching. The research practice should encourage original work with locally produced blueprints, which is going to be more feasible, acceptable and cost effective for its utility. Performing the research within our own learning environment with students and faculty as subjects or respondents will help us to know our teachers and learners better. Once the teachers and the learners are fully aware of their roles in learning, they will transcend to practice research in teaching to its optimum.

The topic considered in the top-notch medical education research should include the review of curriculum from various aspects and its comparison with the guidelines recommended in AMEE guide (1) towards its basic standard and quality development in medical education. A review of curriculum for its mission and philosophy, objectives and its strong and weak areas, are the other topics to initiate research. Research may also look into principles of learning incorporated in curriculum for its teaching strategies, educational impact, feedback and evaluation of curriculum (2). This will not only provide awareness to faculty members to know the curriculum they teach but will also serve to help in faculty development. Problem based learning and the SPICES model itself are vast open field for research. Author has researched this area with some interesting

outcome that evaluates the claim of producing more competent and community oriented doctors with PBL curriculum by one of the medical schools to compare with doctors taught through traditional curriculum by other medical schools in Malaysia (3). Another critical appraisal on PBL by the author reviewed the reasons of not been able to optimally achieve the objectives of PBL curriculum for its inability to establish the important role and practice of integrated clinical skills lab training with problem based learning in undergraduate medical teaching (4).

Depending upon the knowledge and the domain of practice, faculty members should do every thing to know from the learners, about their capabilities as teacher and ways to improve their current teaching. An inventory or questionnaire comprising of few items reflecting on one's own teaching can be developed for self-appraisal. This is a simple exercise, which one may initiate to learn a number of aspects of educational research, for example setting up of a questionnaire, monitoring the reliability and validity of the instrument or the process involved in factor analysis. This may also be helpful in preparing to practice the SPSS data sheet for descriptive analysis and appraisal of result and data collected to evaluate self-teaching abilities (5) and generalizing the result to motivate other faculty members to get feedback from the students on their teaching.

Yet another area of interest and practical research may be the discipline based learning versus PBL and the role of formal lectures versus interactive lectures in medical education. Students can first be familiarized with interactive lectures, which in itself is a good learning exercise to know how to prepare interactive lectures. Faculty members have been experienced to enjoy reading the articles on subjects that they routinely practice in teaching. For example knowing to learn about the traditional versus interactive lectures and how to develop expertise in interactive teaching (6). Students' view can be obtained by preparing a feedback inventory to know as well as to educate them in these two models of lecturing strategies. Author has found this an interesting exercise to

know the students' preferences and the role of formal lectures, particularly practiced to introduce theory in organ-system block teaching prior to PBL tutorials to foster and brush up the students' prior knowledge and clinical skills important for PBL (7, 8). Feedback can also be gathered from students on faculty members' performance in clinical teaching. This will be an interesting study, which can be conducted for individual or collective faculty performance helpful to monitor the faculty's teaching abilities. The outcome of this study can also be utilized to know the role model teachers in clinical teaching for others to emulate. The person emulated for his teaching will be looked forward to, by other members of the faculty as an honor and incentive to work harder to improve their teaching to be at par with the role models. This will set a good precedence and healthy competition among faculty members in teaching and research.

Besides, there are many more aspects of clinical teaching that deserve research for close scrutiny of teaching and these are, exploring the students self-reflecting abilities (9, 10), knowing to prepare a standardized or simulated patient (11), methods of assessment used to reduce subjectivity or biases, students feedback for program evaluation, role of community partners in community based medical education, effectiveness of small group discussion, faculty resistance to an innovative strategy as method of learning and self-directed and continuing learning in medical education. Faculty can easily kick-start with any of these studies to initiate research in medical teaching in a medical school. Faculty should be encouraged to discuss the importance of medical teaching, its effectiveness, liking and disliking of faculty members by the students in the institutions for his/her weak and strong aspects of teaching and quality development to improve the art and science of teaching in medical education (12).

Author has enjoyed learning through all such aspects of teaching in his career as a medical teacher (13). The most important message that has been learnt is about knowing the students for their role as active learners. They know more than the teachers know about their learning and

if opportunity given they will never hesitate to reflect on the truth. To develop expertise as subject specialist alone will not guarantee someone to be a good clinical teacher. Only students can tell who is a good teacher and why. Students' however, must be given the opportunity to give their feedback without the fear of being misunderstood, penalized or victimized. This can best be incurred by maintaining the anonymity in feedback inventories responded by the students together with improving the validity of feedback.

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