

Review Article

Changing Roles of a Teacher in Medical Education

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A B S T R A C T

A number of factors have disturbed the teaching/ learning dynamics in health professions educational institutions. These have necessitated wide and all-encompassing changes in the roles required of a teacher working in this environment. The traditional six roles have doubled to twelve with increasing student strength per class, decreasing availability of teachers, lack of facilities, demands of the CBME curriculum, lack of motivation in students and other factors. This paper focuses on these changed roles of a teacher without which the system will fail in its efforts to produce competent medical professions which are a must for the country and for fulfilling the Sustainable Development Goals of the UN related to health as enunciated in 2015.

Keywords: Roles of Medical Teacher, Changing Milieu of Education, Altered Student Population, Competency-Based Education

Introduction

Over the past few decades, the process of medical education and the art and science of pedagogy have undergone transformative changes in India owing to several imperatives. The personal journey of the author as a pedagogue started in 1973 as a learner cum teacher in Pedagogy, Andragogy, and, more lately, Heutagogy and is continuing. Over half a century, the author witnessed a teacher's ever-changing roles and requirements and, even more so, changing perceptions and expectations of students from educational institutions and those they are willing to accept and consider as their teachers.

This paper is about the changes one has noticed in the teaching/ learning (T/L) process and the roles of a teacher during this half a century. If these changes are not understood in context, accepted, and acted upon by all concerned, medical institutions will no longer be able to function effectively to fulfill the purpose of their existence and meet the expectations of the student community. Consequently, the quality of the output would become unsatisfactory. Such an eventuality is likely to have disastrous consequences on the profession as a whole and the health of the country.

Imperatives to Change

Several developments in medical education have contributed to the mandated transformation. These are described in the following paragraphs:

1. The number of medical colleges in India has risen to over 700 as per the latest figures, with the annual admissions crossing 110,000. Although the latest guidelines of the National Medical Commission mention that future medical colleges cannot have more than 150 students per college, it was not always so. In the past, many colleges were allowed 250 students per year. The teacher numbers have not increased proportionately; hence, the teacher-to-student ratio has been adversely affected, stressing the system.
2. With the implementation of the competency-based undergraduate medical education program in 2019 there was emphasis on the role of acquisition and certification of nearly 2884 competencies and over 800 skills, almost 200 of which needed to be certified as acquired before graduation. The CBME also emphasized the role of small group teaching, thus magnifying and drawing attention to the adverse student-to-teacher ratio.

3. Almost simultaneous with the introduction of CBME came the regulatory definition of the attributes of the Indian Medical Graduate (IMG) with five attributes and 35 sub-competencies. Realizing the importance of soft skills in the functioning of a doctor, the NMC introduced the compulsory vertical curricular thread of the AETCOM module. AETCOM stands for Attitude, Ethics, and Communication skills.
4. Changing expectations of students from the learning ambience in which they find themselves and the simultaneous adverse impact of increasing student numbers without a proportionate increase in teacher numbers, clinical material, simulation resources, and other facilities such as small group learning activity centers in medical colleges.
5. Students' abilities, involvement, and motivation in the academic program have remained variable. To avoid pejorative terms, we refer in our institute to students who lag behind their peers as the "SNACS" group, i.e., Students Needing Additional Curricular Support if the reasons are academic. Those who have other non-academic reasons which make them feel unwelcome or uncomfortable in the ambience of the educational institution are referred to as the "SNAPS" group, i.e., Students Needing Additional Psychological Support. In modern-day education, one encounters the categories of "reluctant learners" and "unwilling learners," referring to those who find themselves in an environment where they do not want to be but are forced to be, largely due to parental pressure. One must not forget the category of students who do very well in the program and are classified as "Advanced learners." They are called the "SPECS" group, i.e., Students Provided Enriched Curricular Support. These require challenges in the form of additional academic inputs, rewards for performance, and additional assigned responsibilities for them to feel recognized and perform even better instead of destroying their abilities and attempts to excel and demotivating them.
6. The availability of information on the internet to the students has also influenced the role of the teacher.
5. Teacher as a planner (curriculum planner and course organizer)
6. Teacher as a resource developer

These remain current and operative in a slightly changed context, although additional mandatory requirements for efficient functioning as a teacher have become necessary. With the addition of these roles, the traditional six roles (and 12 functional categories) have now doubled to twelve. This paper will focus on the changes that have become essential in these traditional six roles and also enumerate some new roles of the modern medical teacher.

Teacher as an information provider: With access to the limitless knowledge available online to the current generation of students at the click of a button on a phone or a tablet, teachers have to evolve from being information providers to being guides for sourcing information and clarifying issues with the accessed information rather than as primary providers of learning material. With ChatGPT and AI, matters will worsen, and teachers must adapt quickly. Lectures have practically lost their attraction and relevance, and teachers need to switch to flipped classrooms and small-group teaching to be fully functional and produce a meaningful impact on learning. To be meaningful, practical classes should be applicable to the skill set required to function after graduation rather than as standalone exercises, the relevance of which is not always apparent to the teachers or the students.

Also, clinical teachers must educate themselves to use embedded simulation exercises in their teaching and classroom planning protocol and learn to use standardized patients for clinical education due to the scarcity of clinical material access and the reluctance of patients to be used as teaching media for medical student education. This assumes crisis proportion because of large class and batch sizes and reduction in patient numbers due to the multiplication of medical colleges.

Instead of being an information provider, the teacher must become a "skill" developer focused on the transformation of skills to his students at the bedside, in the community, in the labs, and in the simulation center to produce graduates with the requisite skill sets to function effectively after graduation and be employable.

Teacher as a role model: Needless to say, this function remains essential, although increasing numbers of students per batch, the diminishing number of dedicated teachers, and the occurrence of a new phenomenon of the existence of reluctant teachers who are in the profession of teaching in the interim between qualification and finding a more lucrative job opportunity, the opportunity for teachers to serve as role models is diminishing or is imperfectly performed. The high teacher-student ratio is an inhibitor

Previously Listed Roles of a Teacher and the Current Requirement

Ronald Harden, in his paper in 2000, described the roles of a medical teacher as falling into the following six major roles and twelve functional categories:¹

1. Teacher as an information provider (lecturer and clinical or practical teacher)
2. Teacher as a role model (on-the-job role model and teaching role model)
3. Teacher as a facilitator (mentor and facilitator)
4. Teacher as an assessor (student assessor and curriculum evaluator)

for teachers and students to come to know each other by name and reputation; hence, functionality in this context is compromised. The use and overuse of teaching adjuncts like PowerPoint also diminishes the relationship between teachers and students, where teaching-learning encounters become mere opportunities to display a set of PowerPoint slides rather than create interest in learning or start a two-way dialogue of questions and answers. Classes are occupied for the entire duration by displaying PowerPoint slides, leaving no time for questions, answers, or clarifications. The reluctance of students to stop the teacher and ask doubts (largely attributable to school education, which has neither fostered nor encouraged the process of asking questions) compounds this error. One must remember the famous saying, "If one asks a question, one may be considered a fool for five minutes; however, if one never asks a question, one will remain a fool for life." Teachers in small group activities require special efforts to foster the spirit of inquiry and the act of raising questions when required. However, mentoring needs to be done voluntarily by willing teachers rather than forcing a reluctant mentor on an unwilling student merely to show accreditation agencies that there is an active mentoring program in the institution.

As a mentor and role model, the teacher is also exceedingly important in developing the attribute of Professionalism, which is an important pre-requisite for the IMG. Although the AETCOM module focuses on this aspect, every teacher must behave in a manner that makes it obvious to students that professionalism is a goal worth striving for and that the AETCOM module is not merely a theoretical exercise.

Teacher as a facilitator: Since the teacher's role as an information provider is diminished, their role as a learning facilitator needs to increase. Very often, more time has to be spent with students than is possible in a large group lecture class, clarifying doubts and working in small groups to facilitate problem-solving skills. The outcome remains unsatisfactory since the curriculum does not always provide adequate time for this. The role of a teacher as a facilitator can happen only if the curriculum gives sufficient time for small group learning and physical facilities permit small group activity. If time allows and there is an inclination, a lot more planning will go into organizing a small group activity with adequate time for group work, problem-solving, and clarifications in a workshop mode, the whole activity taking place in a flipped format with preparatory materials being given beforehand so that the available curricular time is usefully employed.

Teacher as an assessor: This is where massive changes have become mandatory because of competency-based education coming into practice. Once outcome-based education commenced in 2019, certification of achievement of required competencies became compulsory. Hence, the

whole assessment system needs to move from a single summative process at the end of the course to continuous Workplace-Based Assessment (WPBA). This process is better called Learning-Place Based Assessment Methods (LPBA) for undergraduate students instead of WPBA. Many assessment tools are available and have been described for various requirements depending on the competency being certified and the domain to which it belongs – whether affective, cognitive, or psychomotor.^{2,3} One should also remember that many WPBA assessment methods, such as Chart Simulated recall (CSR), Mini Peer Assessment tool (Mini-PAT), etc., may not apply to undergraduates. Hence, the selection of tools must be done judiciously. Faculty development and training are mandatory for teachers in this new role. Relying only on the summative examination can never ensure the development of required competency in 100% of trainees, and there must be a Continuous Combined Summative-Formative process which is put in place.⁴ The role of the regulators in ensuring this change and mandating the required faculty development initiative for this to function satisfactorily cannot be overemphasized.

Teacher as a planner: With the whole system being changed to a competency-based model as per regulatory norms, the teacher's role as a curriculum developer assumes importance. Practically, the entire curriculum has to be reformatted to suit the CBME pattern, the teaching inputs modified to suit the requirements of CBME; assessment regularly at the workplace has to be planned and implemented, and in-depth provision of inputs for soft skills development and communication which are the requirement of modern medicine has to be organized and put in place. Also, meaningful integration to foster holistic rather than fractured learning requires great attention.

The regulatory agency has now defined the Indian Medical Graduate (IMG) as follows:

1. A clinician who understands and provides preventive, promotive, curative, palliative, and holistic care with compassion
2. A leader and member of the health care team and system capable of appropriately collecting, analyzing, synthesizing, and communicating health data
3. A communicator with patients, families, colleagues, and community
4. A lifelong learner committed to continuous improvement of skills and knowledge
5. A professional committed to excellence, ethical, responsive, and accountable to patients, community, and profession

Thirty-five sub-competencies have been prescribed to enable the acquisition and certification of these five competencies. This introduction re-emphasizes the need for all teachers to reeducate themselves on the CBME

process and its implications and re-plan their inputs to ensure the development of the IMG. It amounts practically to re-birth as a new species of teacher.

Of the IMG attributes, the training to be a professional and a lifelong learner is a new dimension. It requires great emphasis, great preparedness, and even greater effort on the role of the teachers, mentors, and role models. The AETCOM module planned by the NMC is an effort in the right direction, but its implementation has not always been satisfactory due to training deficiencies to prepare the teachers.

Therefore, the teacher's role as a curriculum developer has changed. At the individual level, considering the immensity of the job at hand, planning at a micro level for an individual lesson to macro-planning at the course level and planning for meaningful integration assumes extreme importance for the teacher to ensure that the final goal is achieved.

Teacher as a resource developer: In furtherance of what has been stated in the preceding paragraph, teachers must focus de-novo on developing resources for the new curriculum, starting at the micro level with lesson plans and progressing to session plans, course plans, and program plans; these aspects have become more important in recent times. Every teaching-learning encounter has to be treated as a challenge, keeping the outcome in mind, the number of students, and facilities in mind, and planning the resources adequately.

At a macro level, some teachers must prepare new textbooks that conform to the new curriculum and the new format of CBME. Naturally, teachers have to be at the forefront of this endeavor. It amounts to almost inventing the system again.

Teacher as a pedagogic diagnostician and pedagogic therapist to identify and deal with students with T/L issues: Even in established and world-famous institutes, some students have enormous difficulty coping with the program due to a lack of adequate prior training and mental and educational preparedness, lack of comprehension of the course due to language or curricular issues, non-pleasant social ambience, or other psychological issues. If not detected early, these would magnify with time and destroy the career of the concerned student. Early recognition and adequate intervention, individualized to the specific student-related issues, is mandatory, and it falls in the teacher's domain to perform this function. Teaching styles may have to be matched to learning styles, or additional inputs given to clarify non-comprehended portions of the syllabus, or additional exercises provided to facilitate coping. In others, the problem may be motivation. Teachers must recognize this and serve as motivators. The teacher, from a diagnostician, has to proceed to assume the role of an academic therapist. Occasionally, if the issues with

learning are psychological, it falls to the teacher to recognize and refer the student to a student counselor. An established and longitudinally continuous mentorship program will go a long way to improve this aspect of teacher's functioning.

At the other end of the spectrum, some students are advanced learners with no curricular issues but need to be challenged to perform better and further increase already high motivation levels. They also have to be recognized and provided with increased opportunities and challenges so that their spirit of learning is not destroyed by non-recognition.

Teacher as a career counselor: Unlike other institutions such as Engineering Colleges, where professional career counselors and placement cells are in place, in a medical college, teachers must play the parts played by these cells. With increasing opportunities provided by society for career progression after qualification, the teacher becomes the first point of contact to mentor and guide the students in the further progress of their careers, be it academic (such as choice of institutions or subjects for postgraduation) or employment. The mentorship role of the teachers is to be exhibited in this situation.

Teacher as a connector and integrator between departments: With modern education, particularly the CBME, requiring horizontal and vertical integration of different subjects to bring meaning and relevance to the curriculum and facilitate learning, it becomes the responsibility of all teachers to collaborate as education providers and work together to get meaningful and relevant integration to the educational progress. Unplanned and forced integration, merely on delivery of content simultaneously rather than bringing about integration of thought processes, can destroy the education process. For this to be successful, it may be better to convert the educational system from a subject-based approach to a modular format where integration is built automatically in relevant areas.

Teachers as innovators, researchers, or creators of knowledge: Although Harden has not mentioned this role, it has become increasingly a part of the daily routine of a teacher to participate in research or creation of intellectual property or create new knowledge through clinical trials and measures such as development of improved protocols of management, both for one's career progression and also to serve as a role model for students and motivate them to do so themselves. This should be the inevitable course of modern education, so newly qualified students would be pathfinders rather than followers.

It has been rightly written by the poet Ralph Waldo Emerson,
'Do not go where the path may lead,
Go instead where there is no path, and
Leave a trail behind.'

This function of teachers is important in the interest of their career progression and organizational progress in these days of ranking and accreditation, besides motivating their students to follow their path.

Teacher as a facilitator of lifelong learning habits: One of the important attributes of an IMG is to be a life-long learner. The importance of this in the modern context cannot be over-emphasized. Peter Densen has mentioned that the doubling time of medical knowledge has drastically been reduced over the years. 1950 the doubling time was 30 years; in 1980, it was reduced to seven years. In 2010, it fell further to 3.5 years; in 2020, the doubling time was expected by him (in his paper published in 2011) to be a mere 73 days.⁵ Because of this, the role of the teacher in developing this trait in medical students becomes vital. Exercises focused on demonstrating how medical treatment and approaches to patients have changed over the years, thus emphasizing the need for continuous learning, which can be stimuli to keeping oneself updated. Also, exercises in Evidence-Based Medicine, searching the net for recent advances, and giving small projects and assignments requiring searching for and retrieving information can promote the habit of being a lifelong learner. A lot of planning and an interdisciplinary approach is needed for this role.

Teacher as a team builder and communication trainer: The IMG defines a doctor as one who is a team leader and a communicator. Modern medicine requires all healthcare professionals to work as a team. This training must start during medical education by having joint exercises and group activities in subjects like control of hospital infection or disaster management, or community outreach activities, where medical students, nursing, and allied health care students work together in exercises. Working together as a team builds communication skills and fosters joint responsibilities in the healthcare field. In addition, the teachers also have to serve as communication trainers by introducing group exercises to practice special communication skills required for a medical practitioner, such as breaking bad news, discussing investigation and treatment plans, or getting informed consent. Although the AETCOM module has been created for this purpose, interdisciplinary education with teachers of all health professions coming together alone can ensure this in practice.

In conclusion, it can be said that in addition to the traditional six roles specified by Harden, six new roles have become mandatory for teachers to function effectively. Massive changes have occurred in the conventional roles due to the changing environment, increasing students, reducing numbers of teachers, and new requirements due to the curricular change. New roles not mentioned, expected, or experienced earlier have arisen, adding to the burden on teachers.

With these changes, the functions of a teacher have expanded from six to twelve roles. The current situation requires more attention and greater input in the existing six roles because of new requirements and six additional new roles for which they had not been trained earlier.

According to ancient Indian traditions, the role of a teacher has been described in Sanskrit in the following words (the teacher's goals (and their thoughts) in each role are in parentheses)⁶:

1. The teacher who gives you information is called *Adhyapak* ("Think what I think").
2. The one who imparts knowledge combined with information is called *Upadhyaya* ("Feel what I feel").
3. The one who imparts skills is called *Acharya* ("Do what I do").
4. The one who can give a deep insight into a subject is called *Pandit* ("Know what I know").
5. The one who has a visionary view on a subject and teaches you to think in that manner is called *Dhrishhta* ("Go beyond what I know").
6. The one who can awaken the wisdom in you, leading you from darkness to light, is called *Guru* ("Go beyond what we are").

Pragmatically speaking, the modern teacher no longer has to serve as an *Adhyapak*, this role being taken over by the web or other sources of information. By interpreting, explaining, and giving context to information retrieved from the web, his role as an *Upadhyaya* has to be strengthened. He has to function with extra ability as an *Acharya* and a "skill developer" to enable his students to be more employable. The advanced learners may require the teacher to play the role of a *Pandit*. Only a few students have the motivation, the desire, the inclination, or the vision to have their teachers serve as *Dhrishtas* or *Gurus*.

Conclusion

Given the changes in perception, goals, and policies, this is the undeniable dynamics of modern medical education. Resisting this is of little consequence as the changes have come to stay. One must reflect and look at it positively, accept the new requirements, and see what adjustments need to be made within the system and within each teacher to meet the challenges and consider how teacher training can play a vital role in this transformative process.

With such intensive and demanding requirements, it is no wonder that the teaching profession is not that sought after by fresh postgraduates in medicine. Recognition is rare, career advancement poor, and facilities and additional inputs scarce. Will medical education survive this challenge? It remains to be seen. There may be different types of learners, but there is no role in the educational system for "the reluctant teacher." Teachers have to change with time and conform to the requirements of the revolution in medical education.

Conflict of Interest: None

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