

Perception and assessment of scholarship in health science institutions in India – gap between the existing and the desirable

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ABSTRACT

Scholarship or scholarly activity is implied as part of the “job requirement” of faculty in health sciences. However, the concept of scholarship other than an emphasis on publications is hitherto lacking in India with no weightage being given to all four components of scholarship as described by Boyer, viz. the scholarship of discovery, application, integration or teaching leave alone a weightage for innovative activities. This paper describes the components of scholarly activities, the current requirement or lack of it of “mandatory” training right from the undergraduate student days in scholarly activities, poor scholarly requirements for postgraduates and a faculty appraisal which values only publications. Metrics have been suggested for all individual five components of scholarship and an emphasis has been laid on training right from the beginning of medical education for the activity to be internalized.

Keywords

Scholarship, scholarly activity, assessment of medical faculty, scholarliness.

INTRODUCTION

The term scholarship in India is generally employed to refer to financial assistance provided for educational purposes. However, scholarship in the true pedagogic sense for medical faculty refers to “Scholarliness” defined as the scholarly activity of a scholar or work that has been peer reviewed and published, work that leads to new knowledge, work which enables assessment of adequacy for being promoted or innovations which improve patient care and teaching and learning.¹

It has been said that “Attempting to define scholarly activity so that it is relevant to (graduate) medical education across specialties and institutions – from a large academic centre to a rural teaching environment – is akin to finding the Holy Grail”.² This lack of clarity of the definition led Boyer to

write that “it is time to move beyond the old teaching vs. research debate and give the familiar and honourable term “scholarship” a more capacious meaning, one that brings legitimacy to the full scope of academic work” and not merely focus on research and publications.¹

Boyer’s original definition in 1990 included four elements of scholarship. The activities considered scholarly included, discovery (of new knowledge), integration (synthesizing knowledge and harmonizing it with current knowledge), application (applying existing knowledge to day to day practice) and teaching (dissemination of existing knowledge for the benefit of others).¹ Boyer felt that discovery and integration are easier to assess but application involves a higher level of achievement indicating excellence in clinical work

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or education for medical faculty.¹ Routine work does not qualify as scholarly activity. To be considered scholarly, the activity must have clear goals, involve adequate preparation, produce significant results which can be disseminated and involve work which implies reflection.³

One major parameter of excellence which is missing in Boyer's definition is the scholarship of "innovation". The scholarship of innovation goes beyond discovery. In medicine, it may involve describing of new ideas, new procedures, new protocols for patient management, new concepts which affect policy etc. These set it apart from routine work and therefore should also be considered equally scholarly, if not more.

COMMENCEMENT OF SCHOLARLY ACTIVITY

Undergraduate

In many countries training for and assessment of scholarship starts right from the undergraduate medical student. Such planned activity, if introduced as part of the curriculum, has several distinct advantages for the student. It fosters better faculty-student relationship by an opportunity for close mentorship by faculty. It also enables the student to gain additional competence by encouraging a scientific approach, increased ability to apply evidence gained from literature to clinical medicine and gain independence of thought by promoting an ability to apply knowledge to new areas. Besides it takes away the boredom from the regular curriculum. There is evidence that doctors who have received scientific training are at an advantage in clinical decision making.⁴

In India, as opposed to some other countries, students enter the medical course directly after schooling with no prior degrees or college experience. It is accepted that students with a previous degree have a better understanding of research methodology than those who enter medicine without a previous degree.⁵ Comparison of research and scholarly activities of undergraduates in medicine from Asia to other countries has shown that this lack of emphasis on research has resulted in a situation where weakness was seen in all domains of research skills in Asian Medical Students in Ireland compared to students from USA or UK.⁶ Later on in an academic career, this lack of scholarship training as undergraduates may lead to a higher publication rate in Caucasians compared to Asians in USA although the Asians do well in SAT scores for admission.⁷

It is popular belief that undergraduate students in medicine due to the rigorous nature of the curriculum would have little time and little interest in other scholarly activities. Contrary to this opinion, a study has found that only 7% of students expressed lack of interest in research and 24% were co-authors in scientific publications in Brazil.⁸ Wickramasinghe in a recent publication has stated that we should encourage more research output from medical students.⁹ It is felt that encouraging medicine as a second degree will allow educational maturity.⁹

A survey of practices regarding scholarship training and evaluation of undergraduate medical students reveals interesting trends. Most universities in USA lay great emphasis on undergraduate scholarship. At the University of Alabama, USA, it is considered that research experience enhances students' critical thinking and problem-solving abilities and gives an opportunity to discover new knowledge. It is considered mandatory for a career in academics.¹⁰ At Georgetown University School of Medicine, USA, this part of education is a must for all graduates. Each student is required to complete a scholarly project which answers a research question prior to graduation.¹¹ Scholarly projects are also mandatory at the Albert Einstein College of Medicine, NY, USA. Students are given an option to either write a basic science review, a formal systematic review, a case report or a research paper under a mentor.¹² However, at all these institutions scholarly activity has been synonymous with research as the aim. This was not the original intention of Boyer.¹

Of all the undergraduate scholarship models available, the one that is adopted at the University of Utah School of Medicine (UUSOM) seems to offer the greatest opportunity at diversity.¹³ The students are allowed to work on one of several areas such as clinical work, clinical devices, computer programs, education, laboratories, public health, quality improvement etc. The evaluation criteria are also more stringent.¹³

Indian scenario for undergraduates: In India, currently there are no mandatory guidelines from any of the regulatory agencies governing health sciences for mandatory research training of undergraduates or a felt need to promote and facilitate some other mode of scholarly activity. The only opportunity undergraduates in medicine have at present is to compete for the ICMR short term summer projects. Since these are very few, only a handful of undergraduates from a total of nearly 500 medical colleges are selected. All other scholarly activities are left to the individual medical colleges to support, if they so desire.

Postgraduate

The scenario for scholarship training for postgraduates is different. In USA, it is mandatory as per the recommendations of the Accreditation Council for Graduate Medical Education (ACGME) for all disciplines including Family Medicine.¹⁴ Grady, in 2012, had analyzed the scholarship requirements for postgraduates in USA.² All four components as per Boyer are considered and options for the four categories have been mentioned in his paper. Each resident should be exposed to each of the four components of scholarship and should complete at least one scholarly activity during residency. All four components of scholarship should be present when looking at the sum of the resident's work.² The Regional Residency Review committees have the option of fixing more stringent guidelines.

Indian scenario for postgraduates: In India, the requirements for exhibition of scholarship for postgraduate health science students are meager. The Medical Council of India only recommends a postgraduate dissertation, one poster and podium presentation and a paper sent (not necessarily accepted) for publication on any subject prior to completion of the course. The topic of the paper may include single case reports.¹⁵

FACULTY

Assessment of scholarship of faculty in health science institutions has several benefits. It helps administrators to provide a non-threatening environment, teachers to make their Teaching / Learning (T/L) strategies effective, students to maximise learning. It aids professionals to improve practice and overall leads to a better teaching / learning environment and more efficient and acceptable teaching.

The criteria for work of faculty to be considered as "Scholarship" has been published in the AAMC consensus report.¹⁶ The five "P"s considered essential include

- i. **product** requiring a high degree of expertise
- ii. a **process** which involves clear goals, adequate preparation, appropriate methodology and significant results
- iii. work that has been **peer reviewed**
- iv. work that has been **publicly disseminated**
- v. work that results in a **product** that can be built upon.

In India, most medical colleges have shortage of faculty and it may be considered impossible for faculty to find time to indulge in additional scholarly activities. However, routine day to day work can also be raised to the level of scholarship.¹⁷ For example, routine patient care activity becomes scholarship of application if procedures or protocols are taught to others; routine teaching activity is elevated to scholarship if one participates in faculty development programs for other faculty for training in T/L technology. Routine outreach activities become scholarship of application if the teacher helps others to plan, execute and evaluate the program. Research and observation becomes scholarly when it is disseminated¹⁷. More detailed guidelines regarding scholarly activities of teachers have been published.¹⁸

In a scenario, where research is considered as the only scholarly activity, as in India, the suggestions of Morahan and Fleetwood in 2008 as to the methodology of progressing in research publications with increasing years of experience is a useful guideline.¹⁹ They suggest that younger faculty start with developing T/L resources, creation of website and blogs for facilitating learning, posters, podium presentation or publications of case reports. As one ascends the hierarchy ladder one can proceed to reviews, conducting workshops, acquiring higher degrees in education or applying for research grants.¹⁹ Unfortunately, none of these, except for publications, are considered scholarly by the regulatory agencies in India. It will be worthwhile in this context to consider, various activities of medical faculty as part of day to day work to see how they can be elevated to scholarly levels.

Scholarship of Teaching and Learning (T/L), is a systematic and thoughtful investigation of student learning for purposes of improving current practice and student success. "*The scholarship of teaching and learning invites faculty...to view teaching as serious, intellectual work, ask good questions about their students' learning, seek evidence in their classrooms that can be used to improve practice, and make this work public so that others can critique it, build on it, and contribute to the wider teaching commons*".²⁰ It has several advantages. It creates agendas for higher education, changes how teachers teach, changes our concept of teaching and learning, facilitates student learning, enables understanding of conditions affecting pedagogy, helps develop courses and programs and may influence policies.²¹

Ciccone, has mentioned the following activities of teachers as evidence of teaching / learning scholarship.²¹

1. Reads literature about teaching and learning
2. Communicates results of research to colleagues (peer reviewed)
3. Investigates types of student's learning
4. Improves teaching after reading literature
5. Assesses learning outcomes of his/her teaching
6. Communicates results of research to colleagues (non-peer reviewed)

Unfortunately, in his study very few teachers practiced any of the above on a regular weekly or monthly basis.²¹

The scholarship of T/L has several benefits. The institution benefits by enabling it to network with other institutions as a result of collaboration during scholarly activities and thereby increases the perception of the institution. It also enables more active involvement of faculty, students and staff towards the common goal of improving educational experiences. By documenting educational effectiveness and student learning outcomes it increases student satisfaction and retention. For teachers, themselves, indulging in scholarly activity besides improving their skills by reflection and practice brings recognition, renews enthusiasm for teaching and gives personal satisfaction.²² Students are the obvious beneficiaries by promotion of better learning through innovative methods and attention to outcomes and more active involvement by providing a positive educational experience. It also prepares students for successful careers by modelling the process of reflective learning for continuous improvement.

Several factors influence the scholarship of teaching / learning.²³ These may be personal such as age and career stage, confidence, personal perception and work place environment, interest in research, pressure of routine work, conflicting priorities, mere inertia or time. The efforts involved in preparing a research proposal, the lack of funding, the time taken to get approval, difficulty in getting it published in a reputed journal are inhibitory factors. Sometimes, as in India, since interest in research is never fostered from school days, it becomes difficult to indulge in something which has never been taught to one as being important.

A strong case can, however be made to make scholarly activity attractive. Shulman mentions that emphasising on professional roles and responsibility and possibility of influencing policy changes are

important incentives.²⁴ Scholarship can also be projected as a means to increase the status of teaching or as an opportunity to improve one's teaching skills by self- assessment.²⁵

Metrics for different types of scholarly activity

If scholarship has to be assessed in various dimensions, it is necessary to have proper metrics for this purpose across all categories of scholarly activities.

Metrics for clinical excellence: Wright et al in a detailed publication have stressed the methods to assess scholarship of clinical excellence.²⁶ These include communication and interpersonal skills, professionalism and humanism, diagnostic acumen, skilful negotiation of the healthcare system, knowledge and scholarly approach to clinical practice.²⁶ Many of the above listed activities may require multi source feedback (MSF) from other health care workers and peers and near peers in addition to the assessor. However, MSF is much more suitable for continuous monitoring rather than as a once only process. MSF involves motivation, provision of sufficient time and is capable of being manipulated if it is not entirely anonymous. Also, in the Indian context obtaining such feedback is exceedingly difficult in view of cultural issues and perceived "status" differences between different categories of healthcare workers such as faculty, nurses, technicians, attenders, students etc. which inhibits an honest feedback. Nevertheless, feedback from students, colleagues and particularly patients and relatives can not be ignored for feedback on clinical excellence.

As an alternative, a portfolio may be used for this purpose.²⁷ A portfolio with regular entries and monitoring can be an invaluable tool for assessing clinical excellence. Other activities which are important for measuring the scholarship of excellence of medical faculty should include creation of special programs that attract referrals or enhance reputation of organisation, such as a new service, description of a new diagnostic or therapeutic procedure; innovative techniques of management, describing methods for improvement in practice or measures to increase efficiency or a role in development of clinical practice guidelines etc are important. Development of publicity material for the lay public or participation in educational activities for the lay public, involvement in administrative activities and enhancement of patient care or T/L are important metrics. Service as a leader or member of important policy committees, serving as a role model in provision

of optimum patient care, description of methods to evaluate outcome of care, improvement of training programs etc. contribute to scholarly activity. Awards and recognitions to a clinician or a laboratory scientist may also be considered as other important parameters requiring weightage. The parameters are limitless and can be expanded. It requires only thought and effort to include them as part of the annual appraisal form.

Metrics for excellence as teachers: A major part of the job requirement of a medical faculty is as a teacher. There are several criteria which can be considered for assessing scholarship of teaching excellence. These may be included in a portfolio and include extra time spent with students over and above routine work, undergoing training in teaching methodology, teaching style and methods and response of students. It may include towards teaching, relationship with residents, time spent in teaching and preparation for teaching, time spent in curriculum development, related administrative work etc.²⁶ Some of these attributes are more difficult to measure and may require preparation of special rubrics.

Metrics which are easier to implement include, feedback from peers, feedback from students, performance at microteaching sessions, identification and approach to students with problems in learning, creative use of a lecture for teaching / learning purposes, use of non-scholastic skills to improve scholastic performance and carrying out educational research.

Metrics for scholarship of Discovery / Research in health science faculty: These may involve, research metrics such as impact factor of publications, metrics of journals in which the teacher has published such as Scimago Journal Ranking, SNIP, citations, publications reads etc. Credit can also be given for translational research in the form weightage for work done by the teacher which can be transferred directly to patient care services or which has an impact on policies and practices.

Metrics for scholarship of integration: This is easier to assess and can involve activities like analysis of reasons for poor performance in examination and suggesting and implementing corrective steps. Other measures include initiating possibility of adopting Harden's ladder of integration for the benefit of students, planning and organising of teaching learning programs, systematic review of studies on horizontal and vertical integration and its influence on student learning. Linking performance in course to performance

after qualification etc is an important scholarly activity. Appropriate weightages have to be evolved after discussion.

Metrics for scholarship of Application: One can consider activities such as use of manikins / cadavers to teach operative skills, embedding of skill lab training in the curriculum, video recording of procedure and feedback to student, use of flipped classrooms in the Indian context, use of standardised patients to teach history or general physical examination etc.

Metrics for scholarship of innovation: This is by far the easiest to assess and is very often the only one assessed in some countries. Activities of innovation include patents awarded, copyrights registered, clinical impact, service impact, economic impact and policy impact of the work of the teacher.

INDIAN REGULATORY GUIDELINES FOR SCHOLARSHIP

Indian Nursing Council (INC): There are no specific guidelines prescribed by the Indian Nursing Council (INC) for recruitment and promotion of faculty except for a time scale and a basic postgraduate degree in the relevant discipline. There are no recommendations for training in scholarly activities of undergraduates or postgraduates. PhD is not mandatory but only a desirable qualification for faculty members, a mere postgraduate degree being sufficient.²⁸ There are no rubrics prescribed for annual appraisal based on scholarly activities.

Dental Council of India (DCI): Recommendations of DCI are slightly different but definitely are an improvement.²⁹ There are no mandatory requirements for scholarly activities for undergraduate students in Dental Sciences. Postgraduate have to present at least two papers in conferences before being eligible for completion of course. For faculty, the guidelines are a little more in detail. Journals have been categorised into two categories, category I and category II with a higher weightage of 15 points for publications in category I journals and five points in category II journals. Category I include journals indexed to PubMed, journals published by Indian and International professional societies, peer reviewed international and national journals run by the association, medical or dental journals published by health universities / Government universities awarding dental degrees and original research approved by ICMR / similar bodies. Category II comprises of journals published

by Indian Dental Association, Journal of Clinical Dentistry, Institution journals / journals published by state dental societies with a proviso that only three such publications will count for annual appraisal. Every recognised postgraduate teacher is to be evaluated every three years and at least ten points should be added every three years. In any publication, the first author will be given 100% points and remaining will get 50% points. In case of publication of thesis or original research first and second authors will get 100% of points.²⁹

Medical Council of India (MCI): The Medical Council of India recommendations fall between the INC and the DCI as regards quality of recommendation. There are no mandatory provisions for undergraduate scholarly activity. For postgraduates there is mandatory requirement of having completed one poster presentation, one podium presentation and of having sent one paper (of any nature) for publication prior to being eligible for the summative examination.¹⁵

A Master's degree in the concerned specialty is sufficient for appointment as an Assistant Professor. **There are no recommendations towards non-publication scholarly activities.** However, in addition to time criteria, there is a mandatory requirement of two papers published or accepted for publication during the tenure of Assistant Professorship before being eligible for promotion to Associate Professor and a further two papers (cumulatively four) before being eligible for Professorship. The criteria of acceptability of publications require original research papers in Indexed journals. The following are accepted as approved indexing data bases, viz. PubMed, Scopus, Indian Citation Index and Index Copernicus, Embase / Excerpta Medica, Journal of National Associations / Societies and articles in indexed internet journals as first or second author (recently amended to first author or corresponding author). Case reports, abstracts, review articles, non-indexed internet journals, articles in journals unrelated to subject are not acceptable.³⁰

Veterinary Sciences: As opposed to the INC, DCI and MCI, the criteria for faculty recruitment in veterinary sciences are a great deal more perspicacious. They mandate in addition to a postgraduate degree, a PhD qualification, contribution to educational innovation / design of new curricula or courses, or contribution to technology-mediated T/L processes, in addition a minimum score as stipulated in the Academic Performance Indicator. An example is shown from the advertisement of a leading Veterinary

Institute. This seems much more stringent and rational.³¹

CONCLUSION

Scholarly activity or scholarship is an essential attribute of the health profession. For this to be internalized, it is necessary that training for scholarly activities starts right at the undergraduate level and continues to the postgraduate level and to faculty. This is the case in many countries. However, in India, there is no specific mandatory training of undergraduates in this field and the guidelines for postgraduates are grossly inadequate and deficient across the health profession. This is striking when one compares the status of veterinary science. The work of faculty in medical institutions is multi-dimensional and varies based on several parameters such as student strength, number of faculty, department and specialty, patient load and curricular requirements besides the pressure to do research. Each activity of the faculty be it in the components described by Boyer or in expanded situations such as the scholarship of innovation etc. requires specific methods of assessment. The annual appraisal for motivating and monitoring faculty work should be multi-pronged and involve all these activities with appropriate weightage for each of them based on circumstances. To the best of our knowledge no such guidelines exist across the country. The current requirement for faculty advancement is one-dimensional and focuses only on publication output to the detriment of all other aspects of work.

Increased awareness is required both at the regulatory agency level and at the level of universities and colleges to recognize this deficiency and work toward a holistic appraisal of faculty which recognizes true worth and serves to motivate all to follow suit.

CONFLICTS OF INTEREST

None

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