Medical Teacher

Twelve tips to promote excellence in medical teaching

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TWELVE TIPS

Twelve tips to promote excellence in medical teaching

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ABSTRACT *For medical teachers around the world, teaching duties have expanded beyond the classroom and include teaching small groups, assessment, providing instructional materials beyond the syllabus, problem-based learning, learner-centred teaching, clinical teaching on-the-fly—and the list goes on. Faculty development is essential to train medical faculty in essential educational theory and specific teaching skills as well as to encourage a flexible and learner-centred approach to teaching. Finally, self-reflection and critique of teaching techniques are vital to propel medical schools towards promoting and aiming for uncompromising excellence in medical education. The twelve tips described in this article relating to educating teachers, evaluating teaching and eradicating institutional apathy are simple measures that educational leaders can apply to promote excellence in teaching at their parent institutions. The tips introduce a multi-dimensional approach to improving the overall quality of medical education consisting of measures aimed at individual teachers and those aimed at overhauling the teaching climate at medical institutions.*

Introduction

It has been stated that the majority of academic faculty are not formally trained, therefore not qualified in one of their primary responsibilities: teaching (Cannon & Widodo, 1994). Medical school faculty are assuming multiple teaching roles: teacher, administrator, lecturer, small-group facilitator, assessor, role model to name a few (Harden & Crosby, 2000). To help faculty succeed at these teaching tasks, faculty development is key (Wilkerson & Irby, 1998). Reducing faculty burnout in the midst of numerous career responsibilities is another reason to provide faculty with opportunities to improve their teaching skills (Pololi *et al.*, 2001). The British General Medical Council, in a recent edition of its publication Tomorrow's Doctors, includes the following attributes of a medical practitioner (General Medical Council, 2002):

- recognition of the obligation to teach others, particularly doctors in training;
- recognition that teaching skills are not necessarily innate but can be learned;
- recognition that the example of the teacher is the most powerful influence upon the standards of conduct and practice of trainees.

The following twelve tips describe simple steps that can help committed medical educators introduce measures to improve the quality of teaching, and integrate an evidence-based approach and scholarship into their framework of medical education thus promoting overall excellence in teaching at their parent institutions.

Tip 1: Outcome-based education

Establish explicit learning and teaching outcomes to help teachers plan their teaching

Teachers should be informed of and have easy access to written learning outcomes for their courses so that they can plan their teaching strategies and methods. Simultaneously, there should be specific teaching outcomes expected of medical educators so that their teaching can be evaluated using objective criteria. In order that objective criteria can be laid down for promotion of educators, we need to establish the outcomes for clinical teachers that can be monitored and documented. The expected competences of clinical teachers can be modelled on the three-circle Dundee model (Harden *et al.*, 1999). This model serves as an excellent substrate and outcomes can be modified easily for different institutional needs.

Tip 2: Implement best evidence medical education (BEME)

Make the link between evidence-based medical practice and evidence-based medical education

Around the world there are calls for moving away from opinion-based teaching to evidence-based teaching (BEME group, 2000; Harden *et al.*, 2000). Medical education should be subject to the same strict standards of scientific scrutiny as patient care and research (Hart & Harden, 2000). The scientific criteria used to judge medical research should apply to medical education as well (Norman, 2000; van der Vleuten *et al.*, 2000) and if evidence is not available we should be willing to research the area

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(Davies, 1999). Evidence-based medicine seminars can educate medical teachers in the fundamental principles of appraisal of quantitative and qualitative research and serve as a good foundation for further review of educational literature. Wolf has summarized the lessons learned from evidence-based medicine and suggested ways in which evidence-based education could benefit from them (Wolf, 2000). The QUESTS dimensions include quality, utility, extent, strength, target or validity and the setting or relevance of the available evidence (Harden *et al.*, 2000). These dimensions can guide educators to critically appraise published educational methods, decide whether the published results are applicable to their teaching situation and if their educational strategies need to be changed in light of the evidence.

Tip 3: Journal clubs and review of existing literature

Journal clubs for faculty to critically appraise articles on medical education

Although journal clubs have been held for decades to teach faculty and trainees critical appraisal of medical literature, similar sessions for critical appraisal of literature on medical education are still rare. Educational journal clubs can expose faculty to educational literature just as they are traditionally used to promote critical appraisal of research literature in medicine. Guidelines have been written for systematic searching and review of educational literature (Haig & Dozier, 2003a, 2003b). During these journal clubs, individual faculty can select an article on a specific area of medical education, review the literature for their colleagues, critically appraise the research methodology and discuss whether the results are applicable to their own setting. Such sessions will also elevate the scientific importance of educational literature within institutions.

Tip 4: Faculty development

Faculty development is an important instrument to create a positive learning environment for teachers

Experts in higher education have made several recommendations to elicit staff needs when designing faculty development programmes (Hitchcock *et al.*, 1993; Steinert, 2000). Examples of such steps include: developing a specific mission for the programme based on the needs of the institution and individual faculty members, identifying institutional or departmental strengths and weaknesses, consulting experts in designing programmes, involving faculty in planning the programme and appointing an effective leader for the project. Carroll (1993) has suggested the following universal considerations in designing programmes for higher education faculty based on Knowles's adult learning principles (Knowles and Associates, 1984):

- Faculty need to know why they should learn something.
- Faculty should demonstrate self-directed learning.
- Faculty possess experience that can be incorporated into the learning resources.
- Faculty development should be task centred.

Institutions need to plan faculty development programmes that will recognize the limited time available to clinical faculty to participate in professional development programmes and maximize the effectiveness given the time constraints (Gelula & Yudkowsky, 2002).

Tip 5: Evaluation of teaching

Tell the teachers how they taught

The evaluation of clinical teaching can be an important source of support and motivation for teachers. In the context of faculty development, teachers can be evaluated before and after participation in such programmes to assess their impact on the teaching skills of faculty. Teaching evaluation can also provide evidence that programme goals are being achieved, teaching standards are being met or exceeded and allow for reflection on, and evolution of, the curriculum. It is important to follow the basic 'rules' of any assessment method: clear goals, high levels of validity, reliability, efficiency and feasibility. Where possible, more than one source of information should be used. The evaluation may involve looking at the perceptions of teaching, the actual teaching process, or the 'product' or a measurable outcome of teaching (Snell *et al.*, 2000). Methods of evaluation could include:

- trainee evaluation of teachers using standardized teacher-rating forms (Snell *et al.*, 2000) or focus-group interviews (Fontana & Frey, 1994). The feedback can be used to make decisions on promotions and allocating teaching responsibilities within departments (Copeland & Hewson, 2000);
- self-assessment by teachers using variables such as teaching effectiveness, professional effectiveness other than teaching and enjoyment of teaching;
- peer reviews of teaching, which can provide informed, valuable and diagnostic evaluation of the clinical teacher (Irby, 1983; Horowitz *et al.*, 1998; Beckman *et al.*, 2004). Videotaping allows for subsequent analysis by an educational consultant, by peer physicians or by groups of faculty, residents and students (Stanley & Wright, 1981);
- simulation of teaching encounters. This has been used to assess teaching skills (Gelula & Yudkowsky, 2002). An OSTE, or objective structured teaching encounter, with a simulated learners or peer observers can be used to explore a variety of one-on-one or group clinical teaching activities;
- teaching portfolios. Faculty members can document their teaching activities, evaluations and curriculum and evaluation development in a teaching dossier or portfolio (Edgerton *et al.*, 1991).

Tip 6: Evaluate impact of teaching

Find out how the teaching affected learners

Determining the impact of effective teaching is a more difficult task as several factors other than the teaching alone may influence trainee performance (Snell *et al.*, 2000, Steinert, 2000, Steinert *et al.*, 2003). This impact may be measured as educational outcomes (e.g. student learning), practice outcomes (e.g. a change in trainee practice) or health outcomes (e.g. an effect on patient or population health).

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Institutions can also examine whether current teaching methods have a positive impact on their learners in all three domains of knowledge, skills and attitudes. This can be evaluated using the following methods:

- OSCE (objective structured clinical examination) before and after the faculty development programme. If there is a positive change in the scores, it can be extrapolated that one of the influences of this change is more effective teaching;
- observed assessment of students during real patient encounters using specific defined objectives. The observations would be carried out by faculty or peers in the context of daily clinical care;
- questionnaires given to learners to explore their satisfaction with the educational programme and teaching effectiveness. Such questionnaires can be completed before and after implementation of the faculty development programme to compare changes in learning attitudes and satisfaction.

Tip 7: Mentoring

Appoint a panel of senior educators as mentors for junior faculty

The importance of mentoring throughout one's career has been emphasized, especially during professional transitions (Bligh, 1999; Levy *et al.*, 2004). Studies have shown that faculty members who identified a mentor felt more confident, were more likely to have a productive research career, and reported greater career satisfaction (Palepu *et al.*, 1998; Ramanan *et al.*, 2002). Other reported benefits for mentees include: socialization into the profession; help with choice and fulfilment of career path; meaningful involvement in academic activities; and the development of close collaborative relationships (Pololi *et al.*, 2002). A panel of senior educators can be established whose roles would include but not limited to:

- junior faculty mentoring on professional growth and development;
- advising their mentees regarding other internal and external resources, and helping them network with other educators within or outside the institution;
- reviewing their learner evaluations with them;
- facilitating self-reflection and formulation of future goals;
- observing them in their teaching interactions and providing feedback;
- helping them navigate the confusing structure of a very large department thus ensuring a group of dedicated clinicians who will become the forerunners of scientific educational research in the department.

Tip 8: Institutional funding for educational research and development

Encourage educational research by awarding small departmental or institutional grants

Institutions should be willing to make provision in their budget for start-up funds to encourage faculty to engage in educational projects (Steinert, 2000). Many institutions with established faculty development or teaching scholars' programmes provide small grants to encourage their scholars to conduct educational research. They should also help such educators with their research by encouraging affiliations with external educators and other researchers and assisting them in grant writing.

Tip 9: Promote an institutional culture that values teaching highly

Elevate the importance of teaching equivalent to that of research

The culture in academic medical institutions has to change to one where teachers are shown that education is valued. Currently, the culture is clearly one where basic science research and clinical research are held in higher esteem and the value units are grants and publications. This mentality needs to be altered so that clinical teachers feel they are being valued at the same level. The climate should promote self-reflection and self-development of teachers and provide incentives for educators who wish to participate in faculty development programmes. Ultimately, for patients to be benefited by spectacular scientific advances the frontline physicians—namely the trainees—need to be exposed to high-quality educators.

Tip 10: Rewarding excellence in teaching

Reward teachers who improve their teaching techniques based on best available evidence

An ideal institutional climate should reward positive changes in teaching behaviours (Nieman *et al.*, 1997). Faculty whose teaching is further shown to have a positive impact on learners could be rewarded in any of the following ways:

- monetary rewards;
- certificates of honour;
- teaching awards;
- promotion up the academic ladder.

This would inspire all educators to work hard to improve their own teaching techniques and engage in educational projects using an evidence-based approach.

Tip 11: Recognize scholarship in teaching including best evidence medical education

Introduce all medical educators to the scholarship of teaching

Institutions and departments should apply scholarship criteria (Glassick, 2000) to create a distinct academic track for clinician educators. Academic advancement should be based on their teaching impact, dissemination of new curricula and self-reflective teaching. Teachers should feel that they have an equal chance of being promoted within the institution to that of their investigator colleagues. Requirements of new clinical faculty applying for an educator track position should be clear so that they know what is expected of them and how they will be evaluated (Fincher *et al.*, 2000). This can help them establish individual goals and plan their professional activities. Departments should appoint a few faculty formally trained in medical education

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with advanced degrees. These educators can help guide faculty development, faculty evaluation, programme evaluation and educational research.

Tip 12: Participate in the BEME collaboration

Join the BEME collaboration and participate in topic reviews

Institutions should encourage their faculty to join the international BEME collaboration. Educators should be assisted in collaborating with others outside their institution and form topic review groups to study important areas in medical education. Topics that need to be systematically reviewed were ranked and listed at an annual meeting of the Society of Directors of Research in Medical Education (Wolf *et al.*, 2001). The highest ranked topics could be categorized under four major areas: curricular design, learning and instructional methods, testing and assessment, and outcomes. BEME is gaining momentum with growing numbers of people becoming involved as well as an increased number of pertinent workshops, publications and websites.

Conclusions

Although the move towards educator development and best evidence medical education is gathering momentum world-wide, there are several medical schools that are still unaware of this movement. At many institutions teaching remains intuition based and opinion based and teachers feel that teaching duties are simply added on to an already heavy workload. Senior educators in leadership positions need to create a climate emphasizing the importance of excellent teaching, and reward their teachers for high-quality teaching, scholarship in teaching and self-development efforts in education. They also need to establish staff development initiatives in teaching and assessment to help their teachers to be reflective educators. The twelve tips described in this article are some techniques teaching institutions can use to change their value systems to ratchet up the importance of teaching in academe, a movement that will, it is hoped, gather momentum and be self-sustaining in the long run.

Notes on contributor

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References

BECKMAN, T.J., GHOSH, A.K., COOK, D.A., ERWIN, P.J. & MANDREKAR, J.N. (2004) How reliable are assessments of clinical teaching?: a review of the published instruments, *Journal of General Internal Medicine*, 19, pp. 971–977.

BEME GROUP (2000) Best Evidence Medical Education (BEME): report of meeting—3–5 December 1999, London, UK, *Medical Teacher*, 22, pp. 242–245.

BLIGH, J. (1999) Mentoring: an invisible support network, *Academic Medicine*, 2002, pp. 377–384.

CANNON, R.A. & WIDODO, S. (1994) Improving the quality of teaching and learning in Indonesian universities: issues and challenges, *Higher Education Research and Development*, 13, pp. 99–110.

CARROLL, R.G. (1993) Implication of adult learning theories for medical school faculty development programmes, *Medical Teacher*, 15, pp. 163–170.

COPELAND, H.L. & HEWSON, M.G. (2000) Developing and testing a clinical teaching effectiveness instrument in an academic medical centre, *Academic Medicine*, 75, pp. 161–166.

DAVIES, P. (1999) What is evidence-based education?, *British Journal of Educational Studies*, 47, pp. 108–121.

EDGERTON, R., HUTCHINGS, P. & QUINLAN, K. (1991) *The Teaching Portfolio: Capturing the Scholarship in Teaching* (Washington, DC, American Association for Higher Education).

FINCHER, R.E., SIMPSON, D.E., MENNIN, S.P., ROSENFELD, G.C., ROTHMAN, A., MCGREW, M.C., HANSEN, P.A., MAZMANIAN, P.E. & TURNBULL, J.M. (2000) Scholarship in teaching: an imperative for the 21st century, *Academic Medicine*, 75, pp. 887–894.

FONTANA, A. & FREY, J.H. (1994) Interviewing: the art of science, in: N.K. DENZIN & Y.S. LINCOLN (Eds) *Handbook of Qualitative Research* (Thousand Oaks, CA, Sage Publications).

GELULA, M.H. & YUDKOWSKY, R. (2002) Microteaching and standardized students support faculty development for clinical teaching, *Academic Medicine*, 77, p. 941.

GENERAL MEDICAL COUNCIL (2002) *Tomorrow's Doctors: Recommendations on Undergraduate Medical Education*, Version 2 (London, General Medical Council).

GLASSICK, C.E. (2000) Boyer's Expanded Definitions of Scholarship, the standards for assessing scholarship, and the elusiveness of the scholarship of teaching, *Academic Medicine*, 75, pp. 877–880.

HAIG, A. & DOZIER, M. (2003a) BEME Guide No 3: systematic searching for evidence in medical education—Part 1: sources of information, *Medical Teacher*, 25, pp. 352–363.

HAIG, A. & DOZIER, M. (2003b) BEME Guide No 3: systematic searching for evidence in medical education— Part 2: constructing searches, *Medical Teacher*, 25, pp. 463–484.

HARDEN, R.M. & CROSBY, J.R. (2000) AMEE guide No 20: the good teacher is more than a lecturer—the twelve roles of the teacher, *Medical Teacher*, 22, pp. 334–347.

HARDEN, R.M., CROSBY, J.R., DAVIS, M.H. & FRIEDMAN, M. (1999) AMEE guide No 14: outcome-based education: part 1—An introduction to outcome-based education, *Medical Teacher*, 21, pp. 7–14.

HARDEN, R.M., GRANT, G., BUCKLEY, G. & HART, I.R. (2000) Best evidence medical education, *Advances in Health Sciences Education*, 5, pp. 71–90.

HART, I.R. & HARDEN, R.M. (2000) Best evidence medical education (BEME): a plan for action, *Medical Teacher*, 22, pp. 131–135.

HITCHCOCK, M.A., STRITTER, F.T. & BLAND, C.J. (1993) Faculty development in the health professions: conclusions and recommendations, *Medical Teacher*, 14, pp. 295–309.

HOROWITZ, S., VAN EYCK, S. & ALBANESE, M. (1998) Successful peer review of courses: a case study, *Academic Medicine*, 73, pp. 266–271.

IRBY, D.M. (1983) Peer review of teaching in medicine, *Journal of Medical Education*, 58, pp. 457–461.

KNOWLES, M.S. AND ASSOCIATES (1984) *Andragogy in Action: Applying Modern Principles of Adult Learning* (San Francisco, Jossey-Bass).

LEVY, B.D., KATZ, J.T., WOLF, M.A., SILLMAN, J.S., HANDIN, R.I. & DZAU, V.J. (2004) An initiative in mentoring to promote residents' and faculty members' careers, *Academic Medicine*, 79, pp. 845–850.

NIEMAN, L.Z., DONOGHUE, G.D., ROSS, L.L. & MORAHAN, P.S. (1997) Implementing a comprehensive approach to managing faculty roles, rewards, and development in an era of change, *Academic Medicine*, 72, pp. 496–504.

NORMAN, G.R. (2000) Reflections on BEME, *Medical Teacher*, 22, pp. 141–144.

PALEPU, A., FRIEDMAN, R.H., BARNETT, R.C., CARR, P.L., ASH, A.S., MOSKOWITZ, M.A. & SZALACHA, L. (1996) Medical faculty with mentors are more satisfied, *Journal of General Internal Medicine*, 1, p. 107.

POLOLI, L., CLAY, M.C., LIPKIN, M. JR, HEWSON, M., KAPLAN, C. & FRANKEL, R.M. (2001) Reflections on integrating theories of adult education into a medical school faculty development course, *Medical Teacher*, 23, pp. 276–283.

Pololi, L.H., Knight, S.M., Dennis, K. & Frankel, R.M. (2002) Helping medical school faculty realize their dreams: an innovative, collaborative mentoring program, *Academic Medicine*, 77, pp. 377–384.

Ramanan, R.A., Phillips, R.S., Davis, R.B., Silen, W. & Reede, J.Y. (2002) Mentoring in medicine: keys to satisfaction, *American Journal of Medicine*, 112, pp. 336–341.

Snell, L., Tallett, S., Haist, S. *et al.* (2000) A review of the evaluation of clinical teaching: new perspectives and challenges, *Medical Education*, 34, pp. 862–869.

Stanley, I.M. & Wright, H.J. (1981) A method of evaluating opportunistic teaching in clinical medicine, *Medical Education*, 15, pp. 389–391.

Steinert, Y. (2000) Faculty development in the new millennium: key challenges and future directions, *Medical Teacher*, 22, pp. 44–50.

Steinert, Y., Nasmith, L., McLeod, P.J. & Conochie, L. (2003) A teaching scholars program to develop leaders in medical education, *Academic Medicine*, 78, pp. 142–149.

Van der Vleuten, C.P.M., Dolmans, D.H.J.M. & Scherpbier, A.J.J.A. (2000) The need for evidence in education, *Medical Teacher*, 22, pp. 246–256.

Wilkerson, L. & Irby, D.M. (1998) Strategies for improving teaching practices: a comprehensive approach to faculty development, *Academic Medicine*, 73, pp. 387–396.

Wolf, F.M. (2000) Lessons to be learned from evidence-based medicine: practice and promise of evidence-based medicine and evidence-based education, *Medical Teacher*, 22, pp. 251–259.

Wolf, F.M., Shea, J.A. & Albanese, M.A. (2001) Toward setting a research agenda for systematic reviews of evidence of the effects of medical education, *Teaching and Learning in Medicine*, 13, pp. 53–60.