



FROM THE LITERATURE

## Abstracts of Recent Papers

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**Teaching medical students social responsibility: the right thing to do.** Larry R. Faulkner & R. Layton McCurdy  
*Academic Medicine*, 75, 346–350, 2000.

As academic medicine has become more focused on the economic pressures of the marketplace, some educators have expressed concern about whether appropriate attention is being given to the character development and moral education of medical students. The authors conclude that medical schools do indeed have a duty to teach their medical students to be socially responsible. They define a socially responsible individual as a person who takes part in activities that contribute to the happiness, health, and prosperity of a community and its members. They suggest that medical students should participate in carefully designed, socially responsible activities in order to (1) practice and have reinforced such qualities as reliability, trustworthiness, dependability, altruism, and compassion; (2) partially reimburse society for the cost of their medical education; (3) increase their exposure to a population-based approach to health care; and (4) help medical schools fulfill their social contract with the public.

The authors outline the process for developing a curriculum to teach social responsibility to medical students and list some of the key questions faculty and administrators must address in the processes of development and implementation. They conclude that while faculty responsible for implementing a curriculum in social responsibility must be highly committed and prepared to address numerous difficult questions concerning the curriculum's philosophy, structure, and function, the potential benefits of such a curriculum are well worth the effort.

**Long-term outcomes of the New Pathway Program at Harvard Medical School: a randomized controlled trial.** Antoinette S. Peters, Rachel Greenberger-Rosovsky, Charlotte Crowder, Susan D. Block & Gordon T. Moore  
*Academic Medicine*, 75, 470–479, 2000.

**Purpose:** To evaluate the long-term effects of an innovative curriculum, the New Pathway (NP) Program, on behaviors and attitudes related to humanistic medicine, lifelong learning, and social learning.

**Method:** Long-term follow-up of Harvard Medical School students who participated in a randomized controlled trial. Descriptive study using 1998 telephone interviews of 100 1989 and 1990 graduates (50 who had studied the NP curriculum, 50 who had studied the traditional curriculum). The NP Program consisted of problem-based learning tutorials, with coordinated lectures, labs, experiences in humanistic medicine, and clinical experiences; the traditional program consisted of basic science lectures and labs.

**Results:** Of 22 measures on the survey, NP and traditional students differed significantly on only five (three humanism; two social learning): 40% of NP students and 18% of traditional students went on to practice primary care or psychiatry. NP students rated their preparation to practice humanistic medicine higher than did traditional students and expressed more confidence in their ability to manage patients with psychosocial problems. NP students were more likely than were traditional students to believe that faculty from the first two years continued to influence their thinking. NP students liked the pedagogic approaches of their program more than traditional students did. There was no difference between the groups on measures of lifelong learning.

**Conclusions:** Differences between NP and traditional students in the humanism domain first appeared during medical school and residency and remained significant well into practice, suggesting that humanistic medicine can be taught and learned.

**“Advising Oliver Mann”—a case-based, small-group orientation to medical school.** Benjamin Blatt, Gene Kallenberg & Glenn Walker  
*Academic Medicine*, 75, 858–860, 2000.

In 1998, the authors implemented a new academic orientation built around a problem-based clinical exercise for entering medical students, to prepare them for a curriculum emphasizing active learning in small groups. The exercise enables students to begin their professional studies with a “hands on” understanding of two major emphases of the curriculum: (1) the process of small-group learning that will guide their medical education and (2) the principles of patient care that will guide their future practice of medicine. Called “Advising Oliver Mann,” this orientation presents students with a clinical problem that they must work in small groups to solve. By collaborating in teams of ten, they become acquainted with the small-group learning methods at the heart of the school’s curriculum. Through solving a clinical problem, they discover vital principles of patient care, such as the need in clinical decision

making to integrate the scientific perspective with the perspective of patient and family. In developing “Oliver Mann,” the authors came to realize that orientations can be much more than introductions. They can be reflective moments in a busy curriculum, a time for students and faculty to step back and take stock of important issues in education and doctoring. The authors are currently experimenting with exercises linking their freshman orientation with orientations in the second and third years so participants can reflect on the challenges of each new year and carry forward the small-group methods and practice of medicine themes of the new curriculum.

**Scholarship in teaching: an imperative for the 21st century.**

Ruth-Marie E. Fincher, Deborah E. Simpson, Stewart P. Mennin, Gary C. Rosenfeld, Arthur Rothman, Martha Cole McGrew, Penelope A. Hansen, Paul E. Mazmanian & Jeffrey M. Turnbull  
**Academic Medicine**, 75, 887–894, 2000.

At some medical schools broader definitions of scholarship have emerged along with corresponding changes in their academic reward systems. Such situations are not common, however. The definition of scholarship generally applied by medical schools is unnecessarily narrow and excludes areas of legitimate academic activity and productivity that are vital to the fulfillment of the school’s educational mission. The authors maintain that creative teaching with effectiveness that is rigorously substantiated, educational leadership with results that are demonstrable and broadly felt, and educational methods that advance learners’ knowledge are consistent with the traditional definition of scholarship. Faculty whose educational activities fulfill the criteria above are scholars and must be recognized by promotion.

The authors specifically address scholarship in education, focusing on teaching and other learning-related activities rather than on educational research, which may be assessed and rewarded using the same forms of evidence as basic science or clinical research. They build on Boyer’s work, which provides a vocabulary for discussing the assumptions and values that underlie the roles of faculty as academicians. Next, they apply Glassick *et al.*’s criteria for judging scholarly work to faculty members’ educational activities to establish a basis for recognition and reward consistent with those given for other forms of scholarship. Finally, the authors outline the organizational infrastructure needed to support scholars in education.

**An appraisal of medical students’ reflection-in-learning.** D. T. Sobral  
**Medical Education**, 34,182–187, 2000.

**Introduction:** How do students reflect as they strive for some control of learning early in their clinical activities? The purpose of this study was to examine the reflection-in-learning profile of medical students as they started their clinical apprenticeship.

**Methods:** A measure of reflection-in-learning was used to appraise the level and direction of change of reflection in relation to a course experience. The study involved 103 medical students of both sexes who were beginning clinical activities. Assessments of self-regulation of learning, of the meaningfulness of the learning experience, and of diagnostic thinking were also obtained.

**Results:** The results showed that 81% of the students had an increase in scores for reflection-in-learning between the beginning and the end of a course. At the end of the course, the level of reflection-in-learning was significantly associated with self-perceived competence for self-regulated learning and with the meaningfulness of the learning experience. In the following term, students who had high reflection-in-learning scores at the end of the course had higher grade-point averages and greater self-reported diagnostic ability in comparison with those with low scores.

**Conclusions:** There was some evidence of an improved quality of reflection as the students strive for some control of learning. Overall, the findings support the idea that a greater effort at reflection is associated with a more positive learning experience. They also suggest that reflection-in-learning is related to readiness for self-regulation of learning and may be conducive to enhanced diagnostic ability. In conclusion, measuring reflection-in-learning may be a useful tool in the appraisal of medical students' learning profiles.

**The consortium of graduate medical schools in Australia: formal and informal collaboration in medical education.** David Prideaux, Jillian Teubner, Anne Sefton, Michael Field, Jill Gordon & David Price  
*Medical Education*, 34, 449–454, 2000.

**Context:** In 1996–97 three Australian medical schools adopted 4-year graduate medical courses. The schools formed a consortium to establish common admissions processes and to collaborate on curriculum and staff development.

**Outcomes: admissions:** Outcomes in admissions included the construction of an entry test and agreement on common application procedures. Structured interviews and measures of prior tertiary performance were adopted in each school with some local variations. Formal structures were put into place to manage the development of the test and admissions procedures.

**Outcomes: curriculum and staff development:** No formal structures were put into place for curriculum and staff development. While the advantages of common approaches were recognised, it was accepted that it was also important to generate local ownership and commitment to the new courses. Outcomes of educational consortia should not be judged solely by the nature of joint ventures but by the way in which membership of the consortium changes the priorities and practices within the institutions. Examples of the operation of this principle within the three schools include: use of visiting experts to refine and modify approaches to problem-based learning; use of staff from partner institutions to facilitate implementation of the courses; sharing information technology expertise; cooperation in the construction of feedback mechanisms, and sharing advice on fulfilling accreditation requirements.

**Conclusion:** The Consortium has had an important impact on Australian medical education. There is a need for further analysis of the two methods of operation of the consortium, formal and informal, and their relation to its overall functioning.

**Promoting professional knowledge, experiential learning and critical thinking for medical students.** Gillian Maudsley & Janet Strivens  
*Medical Education*, 34, 535–544, 2000.

It has been recognized internationally that undergraduate medical education must adapt to changing needs, as illustrated by the *Tomorrow's Doctors* recommendations from the General Medical Council. This paper aims to relate contemporary educational theory to under-graduate medical educational requirements, specifically highlighting conditions (e.g. experiential learning) for: professional knowledge acquisition; critical thinking, problem-solving and clinical problem-solving; and lifelong professional learning. Furthermore, problem-based learning (PBL) is highlighted as potentially providing such conditions. There are lessons from contemporary educational theory for the reform of undergraduate medical education. These include valuing prior knowledge and experience; promoting learner responsibility through facilitating rather than directing learning; encouraging learners to test out and apply new knowledge, and using small-group work to foster explicitly the elusive skills of critical thinking and reflection. Contemporary educational theory contributes valuable insights, but cannot dictate the ultimate "mix"; at best it provides some principles for reflective analysis of the learning experiences created for tomorrow's doctors.

**Medical faculty as humanistic physicians and teachers: the perceptions of students at innovative and traditional medical schools.** Brigitte Maheux, Claude Beaudoin, Laeora Berkson, Luc Côté, Jacques Des Marchais & Pierre Jean  
*Medical Education*, 34, 630–634, 2000.

**Background and objectives:** The training of caring physicians represents an important goal of medical education. Little is known however, on whether medical faculty constitute good role models for teaching humanistic skills to medical students. In this study, we examined to what extent medical students at innovative and traditional schools perceived their teachers as humanistic physicians and teachers. We also explored whether pre-clinical and clinical students shared the same perceptions.

**Methods:** A mail survey was conducted in Canada of all second-year students and senior clerks at one innovative medical school (problem-based learning (PBL), patient-centred, community-oriented) and three traditional medical schools. Students were asked to what extent they agreed or disagreed that the majority of their teachers behaved as humanistic physicians and teachers; 10 statements were used. Overall, 65% of the 1039 students returned the questionnaire.

**Results:** Over 25% of second-year students and 40% of senior clerks did not agree that their teachers behaved as humanistic caregivers with patients or were good role models in teaching the doctor–patient relationship. More than half of second-year

students and senior clerks did not agree that their teachers valued human contact with them or were supportive of students who had difficulties. There were few differences in the way medical students at innovative and traditional schools perceived their teachers' humanistic qualities. At the pre-clinical level however, there were more students from the innovative school than from the traditional schools (around 60% vs. 40%,  $P < 0.005$ ) who agreed that their teachers valued human contact with them and were supportive of students.

**Conclusion:** Our results indicate that the PBL curriculum fosters better teacher–student relationships during the pre-clinical years. They also suggest that an unacceptably large number of medical students are taught by physicians who seem to lack compassion and caring in their interactions with patients. This study questions the adequacy of medical faculty as role models for the acquisition of caring competence by medical students.

**Summative assessment of medical students in the affective domain.** Th. J. ten Cate & J. C. J. M. De Haes

**Medical Teacher**, 22, 40–43, 2000.

A growing awareness of the importance of professional attitudes in medicine has lead to increased attention in medical schools to medical students' communication skills and attitudes. Assessment of attitudes has always been less important than assessment of knowledge, cognitive skills and psychomotor skills. This may partly be due to the conviction of medical educators (“who are we to assess attitudes of students with summative consequences?”) and partly to the lack of reliable and valid assessment instruments. A discussion of the introduction of such assessment, against the background of growing interest in the Netherlands for procedures to seriously value attitudes in patient care, is presented. The University of Amsterdam approach illustrates the possibilities of assessment of attitude and communication. Students who repeatedly do not meet the objectives in the affective domain may have to leave medical school.

**Assessing professional behaviour and the role of academic advice at the Maastricht Medical School.** S. J. Van Luijk, J. G. E. Smeets,

J. Smits, I. Wolfhagen & M. L. F. Perquin

**Medical Teacher**, 22, 168–172, 2000.

Due to changes in the position of healthcare workers, greater emphasis should be placed on the assessment of the humanistic qualities of professional behaviour. To achieve this, students must receive feedback on their professional behaviour in different situations relevant to future practice. In the Maastricht Medical School it means that from the first year till the clerkships professional behaviour of students is assessed experimentally for judgements and feedback in different educational settings. The criteria of those judgements are discussed in this paper. Unprofessional behaviour during clerkships is reported to the academic adviser or to the examination committee or both. The academic adviser offers support to find

solutions for the student when needed. The examination committee judges the severity of the problem and will act accordingly. Good collaboration between the academic adviser and the examination committee is necessary to cope with the problem of inadequate professional behaviour.

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

The author briefly describes 10 lessons derived from the practice thus far of evidence-based medicine (EBM) from which evidence-based education/best evidence medical education (EBE/BEME) may potentially profit. Two criteria derived from the practice of evidence-based medicine are then used to assess how well the author believes we have done to date. The first criterion applies the five steps in the model of practicing EBM at the level of the individual practitioner to the field as a whole. The second criterion uses the eight components of a systematic review as an evaluative schema. Finally, the author describes where he believes EBM, EBE and BEME are headed in the future. Brief examples are provided and suggestions are offered for improving the likelihood of making more informed decisions based on the highest quality evidence available. Several ways in which BEME might benefit from, and contribute to, both the Cochrane Collaboration and the proposed new Campbell Collaboration are suggested.

**The good teacher is more than a lecturer—the twelve roles of the teacher.** R. M. Harden & Joy Crosby  
**Medical Teacher**, 22, 334–347, 2000.

Teaching is a demanding and complex task. This guide looks at teaching and what it involves. Implicit in the widely accepted and far-reaching changes in medical education is a changing role for the medical teacher. Twelve roles have been identified and these can be grouped in six areas in the model presented: (1) the information provider in the lecture, and in the clinical context; (2) the role model on-the-job, and in more formal teaching settings; (3) the facilitator as a mentor and learning facilitator; (4) the student assessor and curriculum evaluator; (5) the curriculum and course planner; and (6) the resource material creator, and study guide producer. As presented in the model, some roles require more medical expertise and others more educational expertise. Some roles have more direct face-to-face contact with students and others less. The roles are presented in a “competing values” framework—they may convey conflicting messages, e.g. providing information or encouraging independent learning, helping students or examining their competence. The role model framework is of use in the assessment of the needs for staff to implement a curriculum, in the appointment and promotion of teachers and in the organization of a staff development programme. Some teachers will have only one role. Most teachers will have several roles. All roles, however, need to be represented in an institution or teaching organization. This has

implications for the appointment of staff and for staff training. Where there are insufficient numbers of appropriately trained existing staff to meet a role requirement, staff must be reassigned to the role, where this is possible, and the necessary training provided. Alternatively, if this is not possible or deemed desirable, additional staff need to be recruited for the specific purpose of fulfilling the role identified. A “role profile” needs to be negotiated and agreed with staff at the time of their appointment and this should be reviewed on a regular basis.

**Faculty development, teacher training and teacher accreditation in medical education: twenty years from now.** Dan E. Benor  
**Medical Teacher**, 22, 503–512, 2000.

To address the issue of faculty development in the year 2020, an attempt is made to predict the structure of the future medical school and the profile of a future medical teacher. By projecting from the technological, sociological and structural processes that affect medical education, it can be envisaged that there will be several types of medical teachers, namely specialists, who will be resource people for the students, evaluators of student performance, and a minority of “process teachers”. The role of the process teachers will be to tutor, facilitate learning, coach and guide the students in the only domain which cannot be self-learned by technological devices, namely: moral issues, interpersonal communication and crisis management. Each type of teacher requires a different training programme. All programmes, however, should be comprehensive, longitudinal or multiphase, and lead the faculty member from orientation in both the institution and the educational field to a leadership position by successive approximations. It is further expected that societal demands will impose teacher accreditation and, perhaps, licensing. This, however, will remain in the medical profession’s hands, and may bring about a resolution of the “role–profession conflict”, and a more favourable self-perception of faculty members as teachers. Finally, an optimistic conclusion is drawn for the future of medical education.

**Validation and use of an instrument to measure the learning environment as perceived by medical students.** Linda Pololi & Jammie Price  
**Teaching and Learning in Medicine**, 12, 197–203, 2000.

**Background:** Aiming to inform curriculum changes in medical school, we developed, administered and validated a 31 question survey to measure the learning environment as perceived by medical students.

**Description:** We administered the survey annually in four medical school classes in a southeastern medical school from May 1994 through May 1997 (total  $n=619$ ).

**Evaluation:** The survey responses reflected three dimensions of the medical school learning environment: the teacher–learner relationship, self-efficacy and the relationship between physician and patient. We found that the three dimensions are equally valid and reliable for all students, but that the mean values on all three dimensions differed by year in school and number of survey responses.

**Conclusions:** As students progress through school, they perceive deteriorating teacher–learner relationships, feel diminishing self-efficacy, and they accord less value to the relationship between physician and patient. Based on these results, we developed training programs for faculty to promote teaching attributes known to facilitate relationship formation between teacher and learner, and learner-centered and self-directed learning.