Commentary: Principle-Based Teaching Competencies

ROBERT G. BING-YOU, MD
 RORIE LEE, PhD
 ROBERT L. TROWBRIDGE, MD
 KALLI VARAKLIS, MD
 JANET P. HAFLE, EDD

The emphasis on resident competencies advocated by the Accreditation Council for Graduate Medical Education and other medical educators¹ has brought new focus on the teaching competencies of our faculty. The expectation that teaching faculty possess a minimum level of teaching competency has been under discussion at our institution. In our recent (2008) peer-reviewed workshop at the Association of American Medical Colleges, we found that, among the 28 participants, no school was providing faculty development for competence in teaching. As increasing public scrutiny focuses on the medical professions, medical educators will be asked to be more accountable for training programs they are involved in and the teaching skills they possess.²

We are applying principle-based core teaching competencies at our institution across all specialty disciplines. We believe that having a set of core principles related to teaching competencies has many benefits. During the discussion in the aforementioned workshop, these benefits were further identified and defined, including clarifying teaching expectations for faculty, more directed development of assessment methods, increased accountability, and enhanced focus of faculty development efforts.

The knowledge base of competency in teaching can be assessed through written assessment, while the practice and application of the competencies are better evaluated through the use of objectively structured teaching exercises and peer observations.³ A mandated requirement of a minimum level of competence for all faculty members actively teaching continues to be a challenge, but perhaps formal documentation of participation in a faculty development program as indicated on the curriculum vitae may be an important first step; this is already required by many institutions.⁴ Clear definitions of teaching competencies provide a framework and language for system-wide standardization in any faculty development system. For example, teaching competencies could help

define the focus of a faculty member's portfolio; influence resource allocations, recognition, and award incentives; and help enhance promotion efforts. Establishing widely accepted principles for teaching competencies further formalizes the validity and importance of teaching of medical trainees and would improve the quality of teaching.

Effective teaching attributes of clinical teachers have been described,⁵ although teachers and learners may disagree about what constitutes such attributes.⁶ Griffith et al⁷ showed that the quality of teaching improves student learning. The Stanford Faculty Development Program is well known for its behavioral teaching framework and validation of specific teaching behaviors.⁸ Academic competencies have been described for family medicine teachers⁹ and for internal medicine residents.¹⁰ Hesketh et al¹¹ suggest an outcomes-based framework to define teacher competencies. An outcomes-based approach focuses more on the product than the process, and emphasizes learner outcomes as well as faculty outcomes for faculty development courses. Core teaching principles can guide teachers as they teach to whatever outcomes are set in the curriculum: the principles are applicable to all teachers.

We are proposing 7 principle-based teaching competencies (TABLE).¹²⁻¹⁴ A principle is defined as "an accepted or professed rule of action or conduct," "a fundamental, primary, or general truth from which others are derived," or "a fundamental doctrine or truth."¹⁵ Therefore, principles are core tenets that should be acceptable to all medical educators. Such principles provide the foundation from which other divergent perspectives can be developed, but the principles remain as the key basis for expectations. Principles can be informed by previous scholarly work, or principles can have such a strong degree of face validity that there is general, communal agreement on them (eg, "do no harm" in clinical medicine). Medical schools can develop their own set of principle-based teaching competencies and design faculty development programs that train faculty in these areas. Based on our review of previous scholarly work and our collective experience as medical educators, we have arrived at the following competencies as core for our program. Faculty should be competent in: developing a climate conducive to learning; methods of actively engaging learners; assessing a learner's knowledge, skills, and attitudes; facilitating the learner's educational goals; providing feedback to learners; having self-awareness of their own teaching competencies; and fostering self-directed and lifelong learning. Each of the

Robert G. Bing-You, MD, Associate Vice President for Medical Education; **Rorie Lee, PhD**, Educational Instructional Designer; **Robert L. Trowbridge, MD**, Director of Faculty Development, Dept. of Medicine and **Kalli Varaklis, MD**, OB/GYN Residency Program Director are at Maine Medical Center; **Janet P. Hafle, EDD**, is Tufts University Visiting Scholar at Tufts University.

Corresponding author: Robert Bing-You, MD, Maine Medical Center, 22 Bramhall Street, Portland, ME 04102, 207.662.7060, bingyb@mmc.org

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7 major competency categories has more specific capabilities associated with them that more clearly define the category and provide a means of assessing teacher competence.

Based in learning theory, we suggest that these principles apply to all learners (eg, student, faculty member) and learning venues (eg, small group, lecture). The expectations of the faculty teacher should remain the same. Some faculty may use these teaching principles naturally without having prior training or faculty development, based on knowledge of social learning theory and on their observations of effective teaching over the years. We suggest that our framework allows for a more comprehensive accountability for faculty competence in teaching.

The competencies listed in the TABLE are deliberately defined as observable behaviors. Teaching skills are directly translatable to behavior; therefore, it is relatively easy to measure competency in skill areas. Knowledge of teaching can be “observed” through written or oral recitation of pertinent knowledge. Attitudes have been historically harder to “observe” when it comes to assuring and documenting that competency has been achieved and will continue to be a challenge. Yet, defining knowledge, skills, and attitudes remains relevant to determining measures and outcomes. We are proposing these principle-based competencies as the framework for further defining the desired outcomes and measures for specific learning/teaching contexts.

All 7 teaching principles should be incorporated into an overall teaching strategy. Our teaching faculty is encouraged to create an educational environment that is stimulating, motivating, safe, and conducive to learning. The ability to exert the appropriate amount of pressure for a particular learning activity, finding the optimum degree of stress that is enhancing learning rather than negating it, is an important competency. Both the teacher and learner should have the freedom to express doubt, uncertainty, and their own limitations. These characteristics create an educational climate that promotes learning.¹⁶ If one of the goals of teaching is to promote learning, facilitating the learner’s positive perception of the learning environment is essential.¹⁷

Faculty should be able to actively engage learners.⁵ Learners who are disengaged or disinterested are not likely to learn in an effective or efficient manner. Within the lecture format, teaching need not be a one-way transfer of information.^{18,19} Involving learners in the activity can make the learning more relevant and effective, a characteristic that is especially relevant to adult learners. Action plans for further learning experiences are important to emphasize at the end of a learning activity. This de-emphasizes learning activities as isolated events and implies teacher availability and interest for further exploration.¹⁴

Competent faculty should be able to assess a learner’s knowledge, skills, and attitudes. In order to help a learner improve, faculty should know how to determine the

learner’s level of competence with specificity in these 3 domains. This evaluation should be done through direct observation, supplemented by ancillary evaluation techniques such as active questioning, written examinations, objective structured examinations, and self-evaluation by the learner. Teachers can use a variety of questioning and nonquestioning techniques to engage their learners on a cognitive level.^{20,21} Determining the appropriate level of supervision is an essential skill for faculty, both for the sake of the learner and for patient care and safety. Knowing the difference between formative and summative evaluation, and possessing the ability to complete and use these assessments in a meaningful, constructive way, is a core competency for teaching faculty.

In defining the educational goals for their learners, faculty should be attuned to individual learning needs while meeting the specific requirements for professional training. This competency means that faculty should be able to express clear goals with learners, involve learners in prioritizing goals, and find the optimal learning opportunities to meet such goals. Competency-based medical education does not abrogate the responsibility of an individual teacher to establish and express goals for the learner. Actively engaging learners in establishing mutual goals can be accomplished with tools such as learning contracts.²²

Many have described the importance of feedback skills for medical educators.^{23,24} Learners improve when faculty are competent in providing them with effective feedback. High-quality feedback should be timely, specific, descriptive, and related to learners’ goals.²⁵ Faculty should understand the characteristics of effective feedback and be able to provide feedback that results in improved learner performance. Giving appropriate feedback should be a fundamentally accepted competency for all faculty physicians.

Competent faculty should cultivate self-awareness of their own abilities and limitations. Without such awareness, improvement may be difficult. Faculty should be open to reviewing their teaching evaluations frequently, and subsequently determining areas for self-improvement. This competency requires the skill of self-reflection.^{26,27} The importance of reflective practice is gaining attention for teachers as well as medical practitioners.²⁸ Faculty should know how to demonstrate and model professional and ethical behaviors, including self reflection, for their learners. We videotape each faculty member who participates in an objective structured teaching exercise station and we ask them to reflect on their interaction and their selected teaching strategies.

Because medicine is an ever-changing and growing profession, we believe that the faculty should be competent in fostering lifelong learning.^{29,30} The medical knowledge explosion requires physicians and all health care professionals to be committed, self-directed learners.

TABLE	PRINCIPLE-BASED TEACHING COMPETENCIES
1	Develop a climate conducive to learning by:
a	Admitting personal limitations and encourages students to do the same
b	Showing mutual respect
c	Creating a stimulating learning environment
d	Being readily available to learners
e	Supervising learners closely, while allowing the appropriate degree of independence.
f	Demonstrating enthusiasm for learning (ie, positive attitude, energetic)
2	Actively engaging learners by:
a	Implementing a variety of questions and nonquestion techniques.
b	Designing activities in which learners are challenged to integrate concepts
c	Developing action plans for learner improvement
d	Listening to learners
e	Using appropriate audiovisual aids
3	Assess a learner's knowledge, skills, and attitudes by:
a	Evaluating learners on mutually established learners' goals in areas of knowledge, skills, and attitudes
b	Observing learners
c	Determining what degree of supervision is required
d	Implementing appropriate assessment methods
e	Completing both formative and summative evaluations
4	Facilitate the learner's educational goals by:
a	Entering dialogue with learner as to learner's goals
b	Expressing goals to learner
c	Prioritizing goals with learner
d	Offering appropriate clinical learning opportunities
e	Allowing opportunities for learner progression in meeting goals
5	Provide feedback to learners by:
a	Giving learners feedback frequently
b	Giving feedback that is specific, that addresses quality and quantity of learner's effort, uses examples of learner behavior, and is relevant to learning goals
c	Giving learners reinforcing feedback
d	Giving learners constructive feedback
e	Asking learners to reflect on the feedback
f	Developing a plan based on the feedback
6	Reflect and assess their own teaching competencies by:
a	Reviewing one's own teaching evaluations
b	Determining areas of self-improvement
c	Engaging resources for improvement
d	Reflecting as a teacher

TABLE	CONTINUED
e	Demonstrating professional and ethical behavior
f	Actively sharing teaching approaches and ideas with other teachers
7	Foster self-directed and lifelong learning by:
a	Encouraging learners to question
b	Facilitating learners finding appropriate resources
c	Supporting learners in dealing with uncertainties
d	Encouraging learners to challenge their own and others' assumptions
e	Acting as a role model

Teachers should know how to encourage learners in developing such skills and in dealing with many uncertainties in clinical medicine. Faculty has the opportunity and responsibility to actively role model lifelong learning practices.

In summary, the shift in medical education toward learner competency will increasingly focus our attention in the direction of teacher competency. Recent efforts to support faculty teachers through academies have begun.³¹ However, academies may also focus on broader issues such as curricular reform, reward systems, and educational scholarship. We believe a set of principle-based teacher competencies provides an important framework to focus efforts in faculty development and improving faculty teaching skills. We hope our perspectives will promote local and national dialogue around this topic, as well as provide direction for future scholarly activity.

References

- Carraccio C, Wolfsthal SD, Englander R, Ferentz K, Marin C. Shifting paradigms: from Flexner to competencies. *Acad Med*. 2002;77(5):361–367.
- Murray E, Gruppen L, Catton P, Hays R, Woolliscroft JO. The accountability of clinical education: its definition and assessment. *Med Educ*. 2000;34:871–879.
- Stone S, Mazor K, Devaney-O'Neil S, et al. Development and implementation of an Objective Structured Teaching Exercise (OSTE) to evaluate improvement in feedback skills following a faculty development workshop. *Teach Learn Med*. 2003;15(1):7–13.
- Schindler N, Winchester DP, Sherman H. Recognizing clinical faculty's contributions in education. *Acad Med*. 2002;77(9):940–941.
- Irby DM. Three exemplary models of case-based teaching. *Acad Med*. 1994;69(12):947–953.
- Buchel T, Edwards FD. Characteristics of effective clinical teachers. *Fam Med*. 2005;37(1):30–35.
- Griffith CH, Georgesen JC, Wilson JF. Six-year documentation of the association between excellent clinical teaching and improved students' examination performances. *Acad Med*. 2000;75(suppl 10):S62–S64.
- Litzelman DK, Westmoreland GR, Skeff KM, Stratos GA. Factorial validation of an educational framework using residents' evaluations of clinician-educators. *Acad Med*. 1999;74(suppl 10):S25–S27.
- Harris DL, Krause KC, Parish DC, Smith MU. Academic competencies for medical faculty. *Fam Med*. 2007;39(5):343–350.
- Zabar S, Hanley K, Stevens DL, et al. Measuring the competence of residents as teachers. *J Gen Intern Med*. 2004;19:530–533.
- Hesketh EA, Bagnall G, Buckley EG, et al. A framework for developing excellence as a clinical educator. *Med Educ*. 2001;35:555–564.
- Dewey J. *How We Think, a Restatement of the Relation of Reflective Thinking to the Educative Process*. Boston, MA: DC Heath; 1933.
- Mezirow JD. *Fostering Critical Reflection in Adulthood*. San Francisco, CA: Jossey-Bass Inc; 1990.
- Knowles MS, Holton EF, Swanson RA. *The Adult Learner*. Houston, TX: Gulf Publishing Co; 1998.
- The Random House Dictionary of the English Language*. New York, NY: Random House Inc; 1966.
- Roscoe B, Peterson KL. Teacher and situational characteristics which enhance learning and development. *College Stud J*. 1982;16(4):389–394.
- Biddle WB, Smith DU, Tremonti L. Congruence between curriculum goals and students' perceptions of learning environment. *J Med Educ*. 1985;60:627–634.
- Butler JA. Use of teaching methods within lecture format. *Med Teach*. 1992;14(1):11–25.
- Roscoe B, Longworth DL, Hewson MG, Stoller JK. Successful lecturing: a prospective study to validate attributes of the effective medical lecture. *J Gen Intern Med*. 2000;12(6):366–371.
- Taxonomy of Educational Objectives*, BS Bloom, Ed., Longman Publishing, New York, 1956.
- Reznick RK, Dillon RF, Folse JR. Improved prediction of success in surgical clerkship through measures of information processing. *Surgery*. 1988;103(6):671–675.
- Pratt D, Magill M. Educational contracts: a basis for effective clinical teaching. *J Med Educ*. 1983;58(6):462–467.
- Frye AW, Hollingsworth MA, Wymer A, Hinds MA. Dimensions of feedback in clinical teaching: a descriptive study. *Acad Med*. 1996;71(suppl 1):S79–S81.
- Hewson MG, Little ML. Giving feedback in medical education: verification of recommended techniques. *J Gen Intern Med*. 1998;13:111–116.
- Ende J. Feedback in clinical medical education. *JAMA*. 1983;250:777–781.
- Brookfield SD. *Becoming a Critically Reflective Teacher*. San Francisco, CA: Jossey-Bass Inc; 1995.
- Schön DA. *Educating the Reflective Practitioner*. San Francisco, CA: Jossey-Bass Inc; 1987.
- Mann K, Gordon J, MacLeod A. Reflection and reflective practice in health professions education: a systematic review [published online ahead of print November 13, 2007]. *Adv Health Sci Educ Theory Pract*.
- Jennett P, Swanson R. Lifelong, self-directed learning: why physicians and educators should be interested. *J Cont Educ Health Prof*. 1994;14:69–74.
- Mifflin BM, Campbell CB, Price DA. A conceptual framework to guide the development of self-directed lifelong learning in problem-based medical curricula. *Med Educ*. 2000;34(4):299–306.
- Irby DM, Cooke M, Lowenstein D, Richards B. The academy movement: a structural approach to reinvigorating the educational mission. *Acad Med*. 2004;79(8):729–736.