

Chapter 2

Faculty Development for Teaching Improvement

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2.1 Introduction

Faculty development to improve teaching is the most common type of faculty development activity reported in the health professions literature. Although its North American roots can be traced back to the 1950s, it is now an ongoing activity in medical schools around the world and is growing in importance in other health professions schools. In this chapter, we will consider the emergence of teaching improvement programs in health professions education and then review several competency frameworks, each designed to identify what teachers in the health professions need to know and be able to do in order to promote learning. Several best practice examples demonstrate how these teaching competencies might be developed and illustrate essential features of teaching improvement programs.

2.2 Historical Perspective

The birth of faculty development as a critical tool for improving teaching in the United States has been tracked to the Project in Medical Education. This collaborative venture, funded by the Commonwealth Foundation at the University of Buffalo in 1955 under the collaborative leadership of George Miller, MD, from the School

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of Medicine, and Stephen Abrahamson, PhD, from the School of Education, was focused on bringing the findings of research in education to bear on the design and delivery of teaching in the medical school (Miller 1980). A medical student who joined the Project and completed both an M.D. and an Ed.D. in education, Hilliard Jason (1962), is credited by many as the founder of teaching improvement programs in medical education (Wilkerson and Anderson 2004). A seminal report of the results of a survey of faculty members from medical schools from across the United States published in 1977 indicated that most faculty members felt ill-prepared for their roles as teachers and welcomed opportunities to learn more about how to teach (Association of American Medical Colleges 1977; Jason and Westberg 1982). Through the Association of American Medical Colleges (AAMC), Jason subsequently developed workshops, videos, and reading materials on learning to teach, with a particular emphasis on small group discussion and clinical teaching opportunities.

At this same time in higher education in the United States, the increasing use of student evaluations of teachers led to the emergence of programs to improve the teaching of college and university faculty members (Centra 1976). Similarly, in the Netherlands during the 1970s, the first faculty development programs to improve teaching in higher education began (Metz et al. 1996). Prior to the 1970s, sabbaticals and professional conferences in specific disciplinary fields were the usual approach to the improvement of teaching, reflecting the assumption that content expertise was the critical requirement for university teachers. Stimulated by the work of Allen and his colleagues at the University of Massachusetts in the Clinic to Improve University Teaching, the *Handbook for Faculty Development* by Bergquist and Phillips (1975) and *Toward Faculty Renewal* by Gaff (1975), a focus on the improvement of teaching skills and methods was born (Sorcinelli et al. 2006). The Professional and Organizational Development Network (<http://www.podnetwork.org/>) was created in 1975 to provide training in and support for faculty development professionals, many of whom were engaged in providing workshops and conducting individual consultations to faculty members interested in teaching improvement.

The focus of teaching improvement programs in higher education has changed as the understanding of how students learn has evolved over the years (Wilkerson and Irby 1998). Behaviorist theories of learning guided the earliest days of teaching improvement programming, creating an emphasis on observable teacher behaviors and discrete teaching skills, often using faculty development approaches such as individual consultation and video-recorded microteaching sessions. For example, typical faculty development sessions addressed setting the objectives of a lecture, asking questions, and responding to students' answers. In the 1980s, a growing interest in cognitive theories of learning was associated with the creation of teaching improvement programs focused on the design of courses and the use of learning methods that stressed students' cognition and information processing, including a growing emphasis on the teacher's ability to translate his or her content expertise in ways to meet the identified needs of learners (Shulman 1986) and the ability to 'reflect in practice,' described by Schön (1987). In the 1990s, concurrent with a

growing interest in social constructivist theories of learning, teaching improvement activities included the use of extended seminars and longitudinal workshops in which faculty members would learn from and with one another, using interactive exercises, peer coaching, and the formation of ‘learning communities’ composed of teachers with common interests and concerns for the purpose of learning from one another. In Great Britain during the 1990s, Peyton (1998) introduced a ‘teach-the-teacher’ program for clinical teachers using a train-the-trainer model to extend the reach of typical teaching improvement programs to include physicians who teach in the workplace rather than in the academy. All of these types of teaching improvement topics and activities continue to be offered today as part of comprehensive teaching improvement programs in both higher education and health professions education. To this mix, the use of online interactive modules and social media have been added to further increase accessibility of teaching improvement programming.

2.3 A Competency Framework for Teaching

Central to the design of teaching improvement programs is the question of what knowledge, skills, and attitudes are needed by the well-prepared faculty member engaged in health professions education (Irby 1994). Medical education for students and residents depends on the readiness of faculty members to execute their role as teachers. For example, in 2012, at the two medical schools of this chapter’s authors, more than 200 new faculty members (primarily clinical) and more than 200 new residents and fellows began teaching trainees. The relatively large number of new faculty and residents entering medical schools each year makes it imperative that we develop a faculty development strategy for training new faculty and residents for their role as teachers in addition to maintaining and updating teacher competencies for our established teachers. What competencies are needed for new faculty members? Once initially prepared, how do we continue to help teachers continue to improve as they progress from instructor to professor? For decades, much has been written about competency-based education for learners in health professions education. Are there competencies we should consider or require of our teachers? A number of competency frameworks have been proposed for educators in higher education and specifically in the health professions that can be used to answer the question of what teachers in the health professions need to know and be able to do.

In 2004, a national quality assurance system for teaching was implemented at all 14 research-intensive universities in the Netherlands (van Keulen 2006). As one example, at Utrecht University both junior and senior teachers are required to document their attainment of a series of qualifications (written as objectives) using a portfolio system. Staff development is offered at Utrecht, but not required as part of the quality assurance system. What is required is evidence of having attained the desired teaching competency. Medical education in the Netherlands followed suit.

Deans at the eight Dutch medical schools joined with the Netherlands Association for Medical Education and formed a taskforce to develop a set of competencies for medical teachers that would constitute a similar teacher qualification system (Molenaar et al. 2009). The taskforce grew to encompass dentistry and veterinary medicine as well. The description of each teaching competency and the overall framework were published online for feedback and discussion by stakeholders nationally.

The resulting framework included six teaching domains that cover the continuum of education with five sub-domains at three teaching levels ('micro,' 'meso,' and 'macro'). The three levels constitute increasing responsibility from (1) 'micro,' the level of the individual teacher, to (2) 'meso,' the faculty member coordinating part of a curriculum, to (3) 'macro' leadership of a course or program. The three levels of the framework ('micro,' 'meso,' and 'macro') allow for assessing faculty members' level of responsibility and providing distinctions between 'teacher' and 'master teacher' and 'educator' and 'master educator' (i.e. teacher vs. educational leader) (Molenaar et al. 2009). The framework, domains, and sub-domains were adopted nationally, but institutions were left to develop specific local descriptors of those teaching domains. This very systematic process, that allowed vetting by all stakeholders at multiple points in time, helped to develop a national climate for buy-in of the process and expectation that teachers across professions would meet a set of core competencies.

Around the same time in the United States, Hand (2006) used a modified Delphi method to query dental schools deans, faculty developers in dentistry, and members of the American Dental Education Association on the competencies needed for dental teachers – both continuing and new. The underlying framework for this set of competencies used the redefinition of teaching as a form of scholarship (Boyer 1990) as its foundation.

In 2009, the Academy of Medical Educators (AoME) in Great Britain established a set of professional standards for clinical and non-clinical medical (i.e. dental, veterinary, and medical) educators (Academy of Medical Educators 2012). The overall goal underpinning the development of the Professional Standards and the educator assessment system was to improve patient-centered care through medical training and practice. A 'key performance target' was to 'assure greater recognition of the central role of medical educators in the delivery of high quality patient care.' (Academy of Medical Educators 2008, p. 5). Members of the Professional Standards Committee consulted a wide range of stakeholders and engaged numerous national organizations in the development of the standards and domains. All of these groups were invited to comment on the proposed standards and more than 100 responses were received. (Academy of Medical Educators 2012).

Central to the AoME Professional Standards are seven core values: (1) professional integrity; (2) educational scholarship; (3) equality of opportunity and diversity; (4) respect for the public; (5) respect for patients; (6) respect for learners; and (7) respect for colleagues. Each medical educator who wishes to apply for membership must first demonstrate a commitment to the core values. Along with these core values are five competency domains central to medical education:

(1) design and planning of learning activities; (2) teaching and support of learners; (3) assessment and feedback to learners; (4) educational research and evidence-based practice; and (5) educational management and leadership (Academy of Medical Educators 2012). Each domain is further broken down into a list of elements and standards (see Appendix A). Just as with the competencies developed in the Netherlands, there are three levels, again very similar to those described by Molenaar et al. (2009). Attainment of the Standards at a particular level provides evidence for membership in the AoME at the level of ‘Member’ (evidence at levels 1–2) or as a ‘Fellow’ (evidence at level 3) (Academy of Medical Educators 2012, p. 11). These standards are now part of the United Kingdom’s General Medical Council Framework for the Accreditation of Educational Supervisors (Academy of Medical Educators n.d.).

In the United States, several specialties have worked to define teaching competencies relevant to their particular fields. The Alliance for Academic Internal Medicine (AAIM) has put forward a set of skills for internal medicine. Hueppchen et al. (2011) proposed ‘seven habits of highly effective medical educators’ in obstetrics and gynecology, and Harris et al. (2007), using the Faculty Future Initiative in Family Medicine, developed a broad range of competencies meant for all faculty members, ranging from clinical teachers to education deans.

The work to describe a set of teacher competencies builds on the early work to define and evaluate effective clinical teaching (Harden and Crosby 2000; Irby 1978; Price and Mitchell 1993; Skeff et al. 1992). In the 1990s, the Stanford Faculty Development Program developed and disseminated a framework for the improvement of clinical teaching (Skeff et al. 1992) composed of seven specific teaching competencies: (1) establishing a positive learning climate; (2) control of the teaching session; (3) communicating goals; (4) promoting understanding and retention; (5) evaluation; (6) feedback; and (7) promoting self-directed learning. In 2006, Skeff and a group of colleagues held a 2-day conference on Teaching as a Competency with the goal of developing and implementing a skills-development framework (Srinivasan et al. 2011). The group described a set of four core values or principles for teaching in medical education: (1) learner engagement; (2) learner-centeredness; (3) adaptability; and (4) self-reflection; they also proposed six core medical educator competencies for all medical educators (see Table 2.1).

There is a great deal of overlap between the various competency frameworks proposed thus far (and outlined in Table 2.1), including those identified for primary and secondary education in the United States by the National Board for Professional Teaching Standards (2002). The terms used in the various reports may be slightly different, or a new concept may be introduced, such as professionalism and role modeling (Srinivasan et al. 2011) or medical informatics (Harris et al. 2007); however, the overall set of competencies for teaching in the health professions is quite consistent and relatively well defined. Moreover, competency models such as the AoME domains for teaching can be used as a framework for developing a comprehensive faculty development program for health professions teachers.

Table 2.1 Relationship between various teaching competency frameworks

	AoME domains ^b	Netherlands competencies ^c	Academic competencies ^d	Competencies for medical educators ^e	Dental competencies ^f	Carnegie task forces ^g
Design & planning of learning activities	X	X	X	X	X	
Teaching & supporting learners ^a	X	X	X	X	X	X
Assessment & feedback to learners	X	X	X	X	X	X
Educational research	X		X		X	
Management/Administration	X	X	X	X		X
Leadership	X		X			
Evidence-based/Practice-based teaching	X			X		X
Systems-based learning				X		
Medical informatics			X			
Care management			X			
Evaluation		X				
Content knowledge				X		X
Professionalism & role modeling				X		
Multiculturalism						
Members of learning communities			X			
Teach in a variety of settings					X	X

^a Includes learner-centeredness and communication skills
^b AoME Domains: (1) design and planning of learning activities; (2) teaching and supporting learners; (3) assessment and feedback to learners; (4) educational research and evidence-based practice; and (5) educational management and leadership
^c Domains in the Netherlands framework (Molenaar et al. 2009): (1) development; (2) organization; (3) execution; (4) coaching; (5) assessment; and (6) evaluation
^d Competencies for specific Family Medicine roles (Harris et al. 2007): (1) leadership; (2) administration; (3) teaching; (4) curriculum development; (5) research; (6) medical informatics; (7) care management; and (8) multiculturalism
^e Core teaching competencies (Srinivasan et al. 2011): (1) medical/content knowledge; (2) learner centeredness; (3) interpersonal and communication skills; (4) professionalism and role modeling; (5) practice-based reflection and improvement; and (6) systems-based learning
^f Competencies in Dentistry (Hand 2006): (1) foundational competencies; (2) plan and evaluate teaching/learning experiences; (3) teach in a variety of settings (large group, small group, one-on-one, preclinical, clinical, laboratory, distance/continuing); (4) assess student performance; (5) plan and evaluate curriculum; and (6) competencies for the scholarship of discovery (foundational, formulate research question, design studies, write a proposal, conduct and manage research projects, collect and manage data, manage data analysis, evaluate and discuss findings, and publish)
^g Competencies for primary and secondary educators (National Board for Professional Teaching Standards 2002): (1) teachers are committed to students and their learning; (2) teachers know the subjects they teach and how to teach those subjects to students; (3) teachers are responsible for managing and monitoring student learning; (4) teachers think systematically about their practice and learn from experience; and (5) teachers are members of learning communities

2.4 Faculty Development to Meet Teaching Competencies – Selected Examples

2.4.1 *Choosing a Competency Framework*

It is not the goal of this chapter to define a competency framework for health professions teachers, but instead to assist those persons planning teaching improvement programs in identifying a set of competencies for the teachers that will be involved in the resulting program. Milner et al. (2011) suggest three methods for defining faculty competencies: (1) use of the characteristics described by Bland and Schmitz (1986) for successful faculty members; (2) use of an established competency framework; or (3) expert consensus developed during workshops and conferences. For the remainder of this chapter, we will use the AoME Professional Standards to demonstrate the range of objectives that might be addressed in a comprehensive faculty development program designed to prepare faculty members to be competent teachers: (1) designing and planning learning activities; (2) teaching and supporting learners; and (3) assessing and providing feedback to learners. Although longitudinal teaching scholar or fellowship programs usually cover all of the five AoME competencies, we will leave the discussion of this specific type of faculty development program to the authors of Chap. 10. Faculty development approaches to developing the remaining two AoME competencies – educational leadership and scholarship – will be discussed in Chaps. 3 and 4.

2.4.2 *Competency Domain 1: Design and Planning of Learning Activities*

AoME Domain 1 is focused on the following standards for ‘educational design and learning development processes’ (Academy of Medical Educators 2012, p. 15): (1) using learning principles in the development of curricula; (2) developing and using needs assessment; (3) defining learning objectives; (4) selecting learning methods/activities linked to objectives; and (5) evaluating learning outcomes (see Appendix A for the specific standards). These elements are very similar to those described by Kern et al. (1998) in *Curriculum Development for Medical Education: A Six-Step Approach*:

Step 1 – Problem identification and general needs assessment; Step 2 – Targeted needs assessment; Step 3 – Goals and objectives; Step 4 – Educational strategies; Step 5 – Implementation; Step 6 – Evaluation (Kern et al. 1998, p. 5).

The two faculty development programs described below follow the Kern et al. (1998) model for curriculum development and therefore are useful examples of faculty development programs to achieve AoME Domain 1.

Snyder (2001) describes a component of a 1-year Family Medicine faculty development fellowship consisting of a series of workshops on curriculum development

for 3 h per month for 10 months. The teaching format for the workshops included readings, short lectures, group discussions, and the development of a curricular project. Evaluation included participant satisfaction, peer-ratings of the quality of written curricular projects, and evidence of actual implementation of the curriculum. Each written curriculum project was rated with respect to the six steps in the Kern et al. (1998) model described above. Eight projects were produced: seven included a targeted needs assessment; all had goals and learning objectives; six had teaching strategies matched to those objectives, but only five had an evaluation plan. Most importantly, six of the eight curricula were implemented.

Windish et al. (2007) describe 16 years of experience in offering a faculty development program on curriculum design at Johns Hopkins University School of Medicine using the Kern et al. (1998) model:

The goals of the program are for participants to: (1) develop the knowledge, attitudes, and skills to design, implement, evaluate, and disseminate a curriculum in medical education; and (2) design, pilot, implement, evaluate, write-up, and present a curriculum (Windish et al. 2007, p. 656).

The 10-month program consisted of a weekly half-day session with interactive workshops, readings, a mentored curriculum development project, and in-progress reporting sessions. Over a period of 16 years, 145 faculty members completed the program. For cohorts two through nine, each participant identified a peer who could serve as a control in terms of demographic characteristics, training, and professional status. Participants and controls were asked to complete pre- and post-test surveys on their demographic characteristics, academic activities, curriculum development experience, self-assessment of curriculum development skills, implementation of curricula, evaluation of curricula, and enjoyment in curricular activities. Participants also responded to open-ended questions regarding their satisfaction with the faculty development program. At baseline, non-participants rated their curriculum/program development skills and curriculum/program implementation skills significantly higher than the participants. However, the program participants rated their enjoyment of curriculum/program development higher than their peer comparison group. At post-test, the results were reversed with program participants rating their skills in all areas higher than the control group. When pre- to post-test differences were tested, the participants increased from pre- to post-test in all areas except curriculum/program evaluation skills and enjoyment. The peer comparison group also changed from pre- to post-test, but in the opposite direction, with all values decreasing from pre- to post-test. Across all cohorts of participants, 84 % partially or fully implemented a curriculum. Approximately 20 % published an article about their curriculum in a peer-reviewed journal. The vast majority of participants (86 %) worked on their projects in either pairs or teams and reported that the collaboration was an important part of the experience. Of those who worked alone, three quarters wished they had worked collaboratively. Program participants and peer control group members from cohorts two through nine were also followed longitudinally for 6–13 years after the initial post-test (Gozu et al. 2008). At long-term follow-up, participants were significantly more likely to report proficiency in developing curricular programs, implementing/administering curricular programs, and evaluating

curricular programs. Participants were also more likely than controls to report implementing one or more curricula in the last 5 years; they also reported conducting a needs assessment more frequently. Only one area was not significantly different between the participants and the peer control group, 'using different educational strategies based on the objectives of the curriculum and the needs of the learners' (p. 689). These results indicate that not only were there immediate self-reported differences between participants and non-participants, but that those differences were maintained over many years.

These two programs are interesting in that they both use the Kern et al. (1998) model for curriculum development within a single institution; however, the first program evaluated the actual curricula developed to determine if the preferred process was followed by participants, and the second program relied on self-report, albeit over an extended period of time. Mitcham and Gillette (1999) report on a national faculty development program offered by the American Occupational Therapy Association to recruit, train, and retain newly qualified occupational therapy (OT) faculty members with a focus on curriculum design and evaluation. The program started as an intensive week-long in-person 3-credit course offered at the Medical University of South Carolina (MUSC) for new OT faculty from any institution. After completion of the course, participants returned to their home institutions and developed and implemented a curriculum or new instructional materials for a course, which were submitted for grading as part of their MUSC course. This allowed participants in the program to implement what they had learned and receive feedback via a grade for their efforts. Although this course was well received, feedback from participants led to the evolution of the week-long course to a 3-day workshop in which curriculum development remained a key focus that was offered as part of an existing OT conference. Over a 5-year period, ten workshops were offered with 354 participants. A retrospective pre-to-post survey on their perceived mastery of 17 teaching elements revealed self-reported improvement in curriculum development areas: 'construction of a syllabus,' 'construction of teaching plans,' and 'creativity in presentation of content' (Mitcham et al. 2002, p. 337). In addition, participants were asked to share if there were any changes in student evaluations of their teaching. Of those who reported having teaching evaluations, '48 % reported improvements in their evaluations after attending one or more of the ten workshops (Ten percent of respondents had not yet been evaluated...)' (p. 338). An open-ended question asked respondents to indicate the three most important principles that they had learned and used in their own teaching. The most common responses were improved objectives, better exams, and improved congruence between objectives and test items. They also indicated that these principles were commented on by their students in their course/instructor evaluations.

Very few faculty development programs devoted to curriculum development can be found in the health professions education literature. Participants in each of the three examples above met the core objective of the faculty development program – to develop and implement a curriculum. These programs provide evidence that faculty development can be used successfully to improve the curriculum development skills if a significant amount of time and support is available for the faculty development program.

2.4.3 Competency Domain 2: Teaching and Supporting Learners

Core elements of AoME Domain 2 include: (1) teaching/learning methods; (2) the learning environment; (3) feedback on teaching; (4) active learning; and (5) reflection (see Appendix A). Faculty development programs to meet these competencies are the most common type of faculty development described in the literature.

A prime example in this domain is the Stanford Faculty Development Program, which has focused on the teaching of a variety of special topics based on understanding and responding effectively to the ways in which content, learners, teachers, and context interact to promote learning. The Stanford Program was first implemented in 1985 (Skeff et al. 1992), and through its graduates, it has been implemented in medical schools across North America and in other countries, notably China (Wong and Fang 2012) and Russia (Wong and Agisheva 2007). The month-long Stanford Faculty Development Program has trained more than 300 clinical and basic science faculty members from 141 institutions since its initial implementation in 1986 (Stanford Faculty Development Center for Teachers 2012). Faculty members from other institutions travel to the Stanford School of Medicine for a month of training, and then return to their home institutions to implement the teaching improvement program with their own colleagues. The Stanford Program consists of seven 2 h seminars, readings, discussion, video-taped practice teaching of one of the seminars with feedback, and additional practice teaching sessions to prepare to teach the program at their home institution. This train-the-trainer dissemination concept builds on the idea that ‘change agents with characteristics of their target audience have strong credibility for disseminating new ideas to their colleagues.’ (Skeff et al. 1992, p. 1156).

The most important goal of the Stanford Faculty Development Program is to prepare participants to effectively implement the program at their home institution and to evaluate its impact by using a retrospective pre-post assessment format in which institutional participants report on changes in their clinical teaching behaviors (Skeff et al. 1992). However, when the program was implemented in China, there were challenges; ‘although this project was an adaption from a well-studied and successful model, it remains a great challenge to successfully overcome differences in culture, language, and educational systems’ (Wong and Fang 2012, p. 357).

Even so, there was a significant increase in scores on the retrospective pre-post assessment on the overall portion and on the Specific Teaching Skills portion of the survey instrument. Comments from participants most frequently described improvement of the learning climate, promoting understanding and retention, feedback, and promoting self-directed learning (Wong and Fang 2012). In another study of the Stanford Program, Berbano et al. (2006) evaluated the implementation of the Stanford program with eight faculty members using a direct measure of teaching behaviors with an Objective Structured Teaching Evaluation (OSTE). Each participant completed three OSTE stations before and 1 month after completing the program, discussing a case with a third-year medical student, an intern, and an internal

medicine resident. From pre- to post-test, participants changed the types of questions asked and the type of feedback given. The total number of questions decreased significantly at post-test. During the case discussion, factual questions decreased (80–59 %) and the number of higher-level questions requiring analysis/synthesis increased (10 to 34 %, respectively). This study adds to the evidence that the Stanford Program is effective given the direct evaluation of teaching skills versus the use of self-report that is found in most studies.

While workshops and presentations are the most common methods used to help faculty members and residents to improve teaching skills, programs using guided reflection, coupled with practice and feedback, suggest that a broader array of approaches can be effective (Alteen et al. 2009; Branch et al. 2009; Cole et al. 2004; Kumagai et al. 2007; Rabow et al. 2007; Steinert et al. 2010; Tang et al. 2009). A multi-institutional study of a longitudinal faculty development program to improve clinical teaching using reflection deserves special note. Five medical schools in the United States collaboratively developed and implemented a program to foster the teaching of humanistic values and behaviors during the process of patient care (Branch et al. 2009). This 18-month program used self-reflective discussion and narrative writing as core teaching methods. The authors studied outcomes of the program using a quasi-experimental post-test only control group design. Students and residents of program participants and faculty members willing to serve as controls were surveyed regarding their teachers' effectiveness in teaching the human dimension of care. Participants were scored significantly higher on all ten items on the Humanistic Teaching Practices Effectiveness Questionnaire than were controls. Some sample items included: inspires me to grow personally and professionally (88 % vs. 76 %); actively uses teaching opportunities to illustrate humanistic care (86 % vs. 73 %); serves as an outstanding role model (89 % vs. 77 %); explicitly teaches communication and relationship-building skills (83 % vs. 72 %); and inspires me to adopt caring attitudes toward patients (90 % vs. 80 %). The strength of this study is that a standard faculty development curriculum was implemented at multiple medical schools and was evaluated by comparing participants' and controls' teaching behaviors as reported by their trainees. Although selection bias could contribute to these results, at one of the participating medical schools, an historical pre-test compared evaluations by residents of participants and controls and found no significant differences at baseline.

Kumagai et al. (2007) and Tang et al. (2009) describe a novel approach to teaching improvement using interactive theater to stimulate reflection and to provide a venue for practical experience with new teaching behaviors. Forum Theater is a type of interactive theater 'in which the traditional barrier between the actors and the audience is broken down, and the audience becomes directly involved in determining the course of the play' (Kumagai et al. 2007, p. 336).

At the University of Michigan, first- through third-year students work on longitudinal cases in small groups. These cases may contain controversial and contentious issues that should be discussed sensitively and not avoided. In fact, the facilitators are 'expected to assure a safe and respectful environment for everyone in the group, and to raise questions, identify contradictions, and stimulate discussion

that encourages individual and shared reflection of these issues and their consequences' (Kumagai et al. 2007, p. 336).

In order to prepare the small group facilitators for this task, a 3.5 h faculty development session using Forum Theater was introduced in 2004. The University Center for Research on Learning and Teaching (CRLT) has members (i.e. the Players) who are trained in acting and how to reflect upon their own and others' biases, especially with respect to gender, ethnicity, sexual orientation, and socio-economic status. For the Forum Theater faculty development program, the CRLT Players enacted a scenario based on the discussion observed in an actual small group in the course. After the scenario was performed, the faculty development participants (15 at each of two sessions) could ask questions of the Players, all of whom responded within their scenario role. The participants then engaged in a discussion of possible resolutions to the problems demonstrated in the scenario. Then the CRLT Players re-enacted the scenario using the suggestions from the faculty development participants. Participants were surveyed about the experience upon the conclusion of the workshop and also 9–15 months later. A week after the survey, participants were invited to a focus group. The results indicated that the Forum Theater experience led the facilitators to reflect upon their own teaching and have more awareness of the issues affecting women and minorities; it also provided new strategies for dealing with difficult conversations within the small groups. The survey item with the highest rating was 'led me to reflect on how my actions in the classroom affect students' (Kumagai et al. 2007, p. 338). At the focus group, one facilitator shared that the workshop had made him/her 'more sensitive to the cultural aspects of our discussions' (Kumagai et al. 2007, p. 338). The authors felt that the Forum Theater workshop had been quite successful in leading facilitators to reflect on their teaching in a new way that would ultimately improve the discourse within their small groups, especially around sensitive cultural issues.

These examples are meant to illustrate a range of approaches and contexts in which faculty members can be helped to develop improved teaching skills. Of particular interest in two of these examples is the power of collaboration among institutions in the design, implementation, and evaluation of teaching improvement programs.

2.4.4 Domain 3: Assessment and Feedback to Learners

The last AoME area to be addressed in this chapter, Domain 3, focuses on assessment and feedback to learners. Faculty development programs in this domain generally focus on (1) test development; (2) general training in the use of a variety of assessment methods; and (3) feedback. The range of assessment tools used in health professions education includes various forms of knowledge examination types, tools for evaluating competencies during clinical care, and performance evaluation exercises in simulated clinical settings (Wass and Archer 2011). However, this area of teaching improvement has been less well described in the literature, which may reflect that it is less often being addressed in faculty development programs.

There are few studies of faculty development programs in the health professions that focus on improvement of test development and standard setting. Jozefowicz et al. (2002) showed that untrained test item writers are not as good at writing exam items as those who are trained using a standard method, such as the one outlined in the National Board of Medical Examiners (NBME) text on item-writing, *Constructing Written Test Questions for the Basic and Clinical Sciences* (Case and Swanson 1998). Naeem et al. (2012) implemented a 1-week full-time faculty development program to teach faculty members to write multiple-choice questions, short-answer questions, and to develop checklists for an Objective Structured Clinical Examination (OSCE). To evaluate the effects of the program, the authors asked participants to submit an example of their 'best' item for each of the item categories prior to the start of the program. Participants then rewrote their test items after each phase of the intervention. The test items were scored at pre-test, at mid-point, and after the second intervention. There was a significant increase in scores from pre-test to mid-point assessment and from mid-point to post-test with strong effect sizes. These results, along with the study by the NBME, provide evidence that the quality of test items can be improved through faculty development.

The Medical College of Wisconsin's (MCW) longitudinal fellowship program evolved over 10 years into a modular system – Excellence in Clinical Education and Leadership (ExCEL). In this system, faculty members can complete one module on a specific topic or string together a set of modules to complete a longitudinal program of learning (Simpson et al. 2006). This modular system allows faculty members to create their own individualized learning plan that meets their own needs and the needs of their departments. The MCW modular faculty development system includes an 'assessment of learner performance' module. This assessment module includes practical and fun exercises, such as the 'Wisconsin State Fair Chocolate Judging' in which faculty members learn about measurement theory by developing criteria to describe the best chocolate. The work culminates in the judging of a variety of chocolates, some well-known and others submitted for competition at the Wisconsin State Fair. Faculty members learn about bias and measurement error using their taste buds. In another assignment, faculty members work in small groups to develop an OSCE station. This exercise includes all aspects of an OSCE, from the development of the case objectives, the writing of the standardized patient script, the development of the checklist, and even producing the door signs for the station. During the exercise, faculty members are reminded to consider the issues of reliability and measurement error. The assessment module also requires faculty members to develop their own assessment tool based on a real educational need. They then pilot test the assessment instrument and determine the measurement characteristics. Each of these assessment exercises employ active learning methods, are practical for the learner, and employ elements of fun while learning. Evidence of the success of the ExCEL program is its ongoing enrollment levels. These exceeded the planners' expectations with 23 primary care faculty members participating per module with an 85 % completion rate. Retrospective self-report of change from pre-to-post completion of the modules indicates that the program objectives were met. In addition, between 2002 and 2005, the 30 participants 'averaged five

accepted peer-reviewed presentations at regional national meetings and published more than 20 articles and 50 abstracts. Ten of their durable products were accepted to the AAMC's MedEdPORTAL between May and November 2005' (Simpson et al. 2006, p. 950).

Although giving effective feedback is often the skill that faculty members list as one in which they would like to become more skilled, there are few reported studies that focus on training in the art of feedback, especially ones that provide evaluation data beyond participant satisfaction. Walsh et al. (2009) evaluated the outcome of a 2 h workshop on giving feedback using case discussions, role playing, and reflection on how to change teaching practices. A pre-test survey of participants consisted of items on what constituted effective feedback and possible barriers to effective feedback. An immediate post-test survey asked participants to indicate anticipated changes in their teaching practices. Three to four months after the workshop, participants were asked to complete a follow-up survey indicating if they had made the planned changes to their teaching behavior or any unplanned changes. Only 20 % at pre-test felt that effective feedback should be timely or constructive. At immediate post-test, 76 % reported that they planned to make 'a definite change in their teaching practices' (Walsh et al. 2009, p. 48) and 41 % indicated a specific change. The 4-month follow-up survey indicated that approximately 75 % of respondents had interacted with a learner since the workshop and all reported that they had made at least one of their planned changes to the way they gave feedback. Some (37 %) even reported unplanned changes to their teaching. Other studies of programs to train faculty members in feedback skills exist, but a number have resulted in negative results (McAndrew et al. 2012; Stone et al. 2003). Each of these programs to develop skills in providing feedback were short workshops. Development and evaluation of more extensive faculty development programs in this area will likely be needed as medical education moves quickly into competency-based and developmental (i.e. achievement of milestones along the educational continuum) educational models (Dath and Iobst 2010; Holmboe et al. 2011; Ross et al. 2011).

2.5 Designing Teaching Improvement Activities

Evaluation studies of specific teaching improvement interventions provide limited guidance on the most powerful design for teaching improvement activities. Most programs have largely relied on participants' ratings of quality or usefulness. Others have relied on self-reports of changes in knowledge, attitudes and beliefs about learning and teaching and sometimes actual change in teaching practices. Few evaluation studies have included control groups or focused on changes in students' ratings of the teaching behaviors or actual learning outcomes (Steinert et al. 2006). Those few studies associated with actual changes in teaching behaviors or learner outcomes suggest that certain teaching improvement formats are more effective than others (Chism and Szabo 1997; Steinert et al. 2006; Wilkerson and Irby 1998).

In a systematic review of studies in faculty development, Steinert et al. (2006) concluded:

Key features of effective faculty development contributing to effectiveness included the use of experiential learning, provision of feedback, effective peer and colleague relationships, well-designed interventions following principles of teaching and learning, and the use of a diversity of educational methods within single interventions (p. 497).

New approaches to teaching improvement activities will likely capitalize on the growing use of social media and other methods of brief electronic communication, such as those already being used in clinical teaching to ‘push’ information to learners (Boulos et al. 2006), but there is little in the literature currently that describes or evaluates the use of these tools for teaching improvement purposes, although Web-based modules on teaching skills have been available for many years (e.g. Practical Doc, <http://www.practicaldoc.ca/teaching/practical-prof/>). In one new approach using e-mail, Matzie et al. (2009) used a spaced education approach for teaching residents to give feedback in a general surgery program. The 55 participating residents were stratified by year of training and whether they had attended a 1 h didactic program on giving feedback; they were randomized to either receive or not receive a weekly email for 9 months containing one succinct tip on giving feedback (e.g. keep feedback focused and avoid trying to accomplish too much). Students rotating on the surgery clerkship were asked to evaluate the feedback frequency and quality provided by residents with whom they had worked over the previous 2 weeks. Residents in the spaced practice intervention were rated as providing significantly more feedback and feedback that was more useful than those in the control arm. Spaced education uses repetition and time to reinforce knowledge and skills learned, as opposed to massed or one-time learning. Use of e-mail reminders, or in the future possibly the use of Twitter to serve as an adjunct to faculty development, may become more common. As more millennial students become faculty members, we may need to examine how we deliver faculty development to a generation that is accustomed to receiving bits of information through texting and Twitter and using social media for communication.

Whatever the methods employed in teaching improvement programs, it is important to focus on the critical goal – change. O’Sullivan and Irby (2011) have suggested that we need a more complex model of faculty development in order to better understand the features that lead to desired changes in teachers, learners, organizations, and patients. The authors suggest the need to include a focus on the faculty development community of participants and the workplace community rather than focusing only on the individual participants. They suggest four components essential to the planning and evaluation of faculty development – the participants, the program content, the skills and attitudes of the facilitators, and the organizational contexts in which participants actually teach in order to extend our understanding of essential faculty development features. In the book, *Influencer: The Power to Change Anything*, Patterson et al. (2008) suggest that the likelihood of change is increased when individual and organizational ‘six sources of influence’ are included: making the undesirable desirable; capitalizing on peer pressure and developing

organizational rewards and accountability measures; building the individual's personal commitment to change; reinforcing new abilities through the engagement of others; and structuring the environment so that the targeted behaviors are rewarded. This interplay of personal, social, and structural sources of influence are drawn from social psychology and organizational change. The development of competencies for teachers at the school, institution, and national level is changing how we prepare and reward competent teachers. There is a long history of faculty development for teaching improvement. How we as faculty developers design, implement, and disseminate our successful programs should help us move the field forward to meet the needs and challenges put forth to us by our stakeholders – the trainees, patients, faculty members, and accreditation bodies – who will demand of us the tools and training to make our faculty the most competent teachers possible.

2.6 Implications for Teaching Improvement Activities in Faculty Development

As teaching as a scholarly activity and educational scholarship (Boyer 1990) become more valued faculty activities in health professions education and assume a more influential place in the promotion and tenure process, it is likely that more institutions, and perhaps more governments, will follow the lead of the Netherlands. We believe that a competency framework, such as the one developed by the AoME, is a useful guide for faculty developers in creating programs to train faculty members to meet teaching standards. In this chapter, we have described a number of successful faculty development programs that trained faculty to develop curricula, to teach, and to assess and provide feedback to learners. In some areas, such as curriculum development and assessment, there is a paucity of published studies that go beyond student satisfaction as an outcome. A challenge for us is to document and rigorously study the work that we are doing. A number of the studies described went beyond self-report of behavioral change following participation in a faculty development program. Examples of these are evaluating a curriculum for quality (Snyder 2001), assessing teaching behaviors via an objective structured teaching evaluation (Bebano et al. 2006), or evaluating test items (Jozefowicz et al. 2002; Naeem et al. 2012).

Resources get scarcer all the time. Budgets are smaller and time seems to be ever shrinking. If we as faculty developers are to justify our continued existence within our professional schools, we will likely need to meet greater scrutiny to demonstrate that our programs are worthwhile to our faculty members and institutions in general. Can we do that by designing comprehensive faculty development programs that train our faculty members to meet specific measureable competencies, just as students and other trainees must do? Should we also consider a developmental model (Dreyfus and Dreyfus 1986; Green et al. 2009) that will demonstrate that we can train our faculty members to achieve varying levels of competency and maintain

their competency over time? O'Sullivan and Irby (2011) suggest that participants identify a knowledge gap and then develop their own methods to demonstrate that they have filled that gap. The use of a competency framework should inform faculty members about the values and expectations of the institution, allowing them to evaluate their own needs to meet identified standards as teachers. Using the competency framework within a comprehensive faculty development program could inform not only the individual faculty member but also the larger community of faculty members, affecting the context in which they teach and work. This is consistent with O'Sullivan and Irby (2011) who suggest that this is the ultimate goal of faculty development. They contend that the system is complex and requires us to consider the various communities of practice that are affected by our programs and where our programs are situated. Is a successful faculty development program one that only affects the participant or is the program successful when it affects the larger community and context of the institution? One may also ask if making expectations for our teachers more explicit, such as using a competency framework, is the first step in influencing the community of practice. If faculty members know what is expected of them to demonstrate that they are effective teachers, must we provide the tools for them to improve their teaching in a way different from what we do today? At the Medical College of Wisconsin (Simpson et al. 2006), the longitudinal faculty development program was changed to a modular system to better meet the needs of participants. Is a more individualized system the future of faculty development? If O'Sullivan and Irby's approach (2011) is correct, this may be the case if we can also create community within these smaller units of instruction. Only time and the use of rigorous outcome measures will inform us if this new approach to improving teaching is successful.

2.7 Conclusion

In the 1950s, faculty development to improve teaching was one of the first types of faculty development to emerge in higher education. Today, it is still the most common form of faculty development in the health professions. In this chapter, we reviewed a number of competency frameworks to improve teaching for health professions teachers. We found that most of these frameworks had considerable overlap with each one including: (a) skills in curriculum design; (b) teaching and supporting learners; and (c) assessment and feedback. Several best practice examples from the faculty development literature demonstrate how these three competencies might be learned and illustrate what is known about the effectiveness of a variety of teaching improvement activities. The literature is limited in the quality of evidence available about what works for teachers, their students, and the systems in which both education and patient care occur. As faculty developers, we will need to continue to innovate in defining and teaching the competencies necessary for our health professions teachers as they progress from novice to master teachers.

2.8 Key Messages

- Faculty development to improve teaching is the most common type of faculty development activity reported in the health professions literature.
- Many competency frameworks for improving the teaching of health professions teachers exist; most of these include: (a) skills in curriculum design; (b) teaching and supporting learners; and (c) assessment and feedback.
- The competency framework developed by the Academy of Medical Educators in Great Britain is a useful guide for faculty developers who wish to create programs to train faculty members to meet teaching standards.
- Many successful faculty development programs have trained faculty members to develop curricula, to teach, and to assess and provide feedback to learners. Many have also gone beyond self-report of behavioral change following participation in a faculty development program and have included more rigorous evaluation methods.
- In the future, faculty developers should consider developing comprehensive faculty development programs that train our faculty members to meet specific measurable competencies.

Appendix A

First three Domains of the 2012 Professional Standards of the Academy of Medical Educators (Re-printed with permission from the Academy of Medical Educators (2012) *Professional Standards*.)

Domain 1: Design and Planning of Learning Activities

This domain outlines the expected standards for medical educators involved in educational design and learning development processes. Applicants must demonstrate and referees must corroborate these capabilities.

Element	Standard level 1
Learning and teaching principles	1.1.1 Shows how the principles of learning and teaching are incorporated into educational developments 1.1.2 Is aware of different ways of learning and teaching
Learning needs	1.1.3 Shows how the needs of learners are considered
Learning outcomes	1.1.4 Is aware of the need to define what is to be learned
Learning and teaching methods and resources	1.1.5 Is aware of a range of learning methods, experiences and resources and how they may be used effectively
Evaluation of educational interventions	1.1.6 Responds appropriately to feedback and evaluation of educational interventions

Standard level 2	Standard level 3
1.2.1 Applies learning and teaching principles in the design of a unit, module or subject area	1.3.1 Applies learning and teaching principles in the design of a curriculum for a whole course or degree program
1.2.2 Matches course design to support different ways of learning and teaching	
1.2.3 Gathers and interprets basic information on the needs of learners	1.3.2 Conducts complex learning needs analyses including those of learners, groups, professions or healthcare systems
1.2.4 Constructs appropriate learning outcomes that can be measured or judged	1.3.3 Defines learning outcomes within theoretical frameworks
1.2.5 Matches learning methods, experiences and resources to intended outcomes	1.3.4 Is adaptive and effective in securing resources and dealing with constraints
1.2.6 Develops learning resources for planned courses	
1.2.7 Evaluates and improves educational interventions	1.3.5 Conducts, interprets, acts on and disseminates evaluations of learning programs

Domain 2: Teaching and Supporting Learners

This domain outlines the expected standards for medical educators in relation to teaching and facilitating learning. Applicants must demonstrate and referees must corroborate these capabilities.

Element	Standard level 1
Delivering teaching	2.1.1 Appropriately uses a range of learning and teaching methods and technologies
Maintaining an effective learning environment	2.1.2 Is aware of the importance of establishing a safe and effective learning environment
Learning and teaching methods and resources	2.1.3 Is aware of a range of learning methods that may be used in learning and teaching activities
Feedback on learning	2.1.4 Understands the importance of seeking, receiving and responding to feedback about learning and teaching
Participation	2.1.5 Describes ways of involving learners in actual practice e.g. experiential learning opportunities
Reflection	2.1.6 Is aware of the importance of reflection on practice

Standard level 2	Standard level 3
2.2.1 Appropriately uses a broad range of learning and teaching methods and technologies	2.3.1 Is adaptive and innovative in respect to learning and teaching
2.2.2 Establishes an effective learning environment	2.3.2 Supports others to innovate
	2.3.3 Monitors and manages complex learning environments

(continued)

(continued)

Standard level 2	Standard level 3
2.2.3 Provides educational, personal and professional support in relevant contexts	2.3.4 Proactively seeks to improve the learning environment
2.2.4 Applies learning and teaching methods that are relevant to programme content	2.3.5 Adapts learning and teaching methods to unexpected circumstances
2.2.5 Uses learning resources appropriately	2.3.6 Develops innovative learning resources
2.2.6 Develops self-awareness in learners	2.3.7 Develops self-awareness in learners and teachers
2.2.7 Listens actively and provides effective feedback to learners using a range of methods	2.3.8 Interprets, synthesizes and deals with conflicting information arising from feedback from learners and educators
	2.3.9 Effectively demonstrates to learners the rationale for changing or not changing teaching and learning activities in response to feedback
2.2.8 Engages learners in reflective practice	2.3.10 Actively seeks to incorporate learners into a community of practice
2.2.9 Uses systems of teaching and training that incorporate reflective practice in self and others	2.3.11 Demonstrates a commitment to reflective practice in self, learners and colleagues

Domain 3: Assessment and Feedback to Learners

This domain outlines the expected standards for medical educators in making and reporting judgments that capture, guide and make decisions about the learning achievement of learners. Applicants must demonstrate and referees must corroborate these capabilities.

Element	Standard level 1
The purpose of the assessment	3.1.1 Is aware of the general purpose of assessment
The content of the assessment	3.1.2 Is aware that assessment should align with the course learning outcomes
The development of assessment	3.1.3 Is aware that good assessment practices are integral to course development
Selecting appropriate assessment methods	3.1.4 Is aware that assessment methods are chosen on the basis of the purpose, content and level of the assessment
	3.1.5 Uses a basic range of methods to assess learners
Maintaining the quality of assessment	3.1.6 Is aware that assessment practices require continuous monitoring and improvement

Standard level 2	Standard level 3
3.2.1 Relates the purposes of assessments to the context of the course or programme	3.3.1 Designs complex assessment strategies and blueprints
3.2.2 Demonstrates that the contribution of any assessment addresses the learning outcomes and the assessment blueprint	3.3.2 Maintains and manages assessment blueprints for one or more courses or levels
3.2.3 Contributes to the construction of assessment items	3.3.3 Leads design and development of assessments utilising accepted good practice such as in the determination of reliability, validity, acceptability, cost effectiveness and educational impact
3.2.4 Selects assessment methods that match the purpose, content and level of the learner	3.3.4 Assesses learners using a wide range of methods
3.2.5 Uses a broad range of methods to assess learners	
3.2.6 Interprets accurately assessment reports in relation to educational quality management	3.3.5 Contributes under guidance to standard setting processes
	3.3.6 Applies standard setting procedures most relevant to particular methods and format
	3.3.7 Interprets technical data about effectiveness of assessment practices
	3.3.8 Prepares assessment reports for learners, examination boards and external stakeholders

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