



Transforming and Scaling up Health Professional Education and Training

Policy Brief on Faculty Development

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Acronyms

AMEE	Association for Medical Education in Europe
BEME	Best Evidence Medical Education
FAIMER	Foundation for the Advancement of International Medical Education and Research
WHO	World Health Organization

Executive Summary

While the terms “staff development” and “faculty development” are often used interchangeably in the literature and can refer to any aspect of an academic’s role, this brief uses the term “faculty development” to refer to the development of the teaching role among faculty. Most of the literature focuses on medical training, with comparatively little on faculty development in nursing and midwifery education, but it was recognized that many principles are generic across health disciplines.

The issues and challenges related to the development of faculty for the teaching role are described in seven broad areas: the multi-dimensional roles of health professionals; attitudes towards teaching; conflicting opportunities; the shortage of teachers; the increased demand for physicians, nurses and midwives; developing health professionals for a teaching role; and rewards for teaching. These seven issues and challenges have been discussed using Steinert et al.’s (1) conceptual framework. Little or no literature could be found addressing the selection of teaching staff for the health professions and tailoring faculty development to local context and need. The major problem is that there is an absolute shortage of medical educators, and this is a limiting factor in terms of the scaling up of health-professional education.

Globally, faculties face heavy teaching loads, a shortage of educators, limited infrastructure and competing demands for research and clinical services. Improvements in performance are described in terms of the development of new teaching skills or assessment techniques, better ways of planning or implementing curricula, new ways of thinking about the student–teacher relationship, and increased commitment to educational scholarship. While a number of innovative opportunities exist, determining their impact is a more difficult task as several factors other than teaching alone may influence trainee performance.

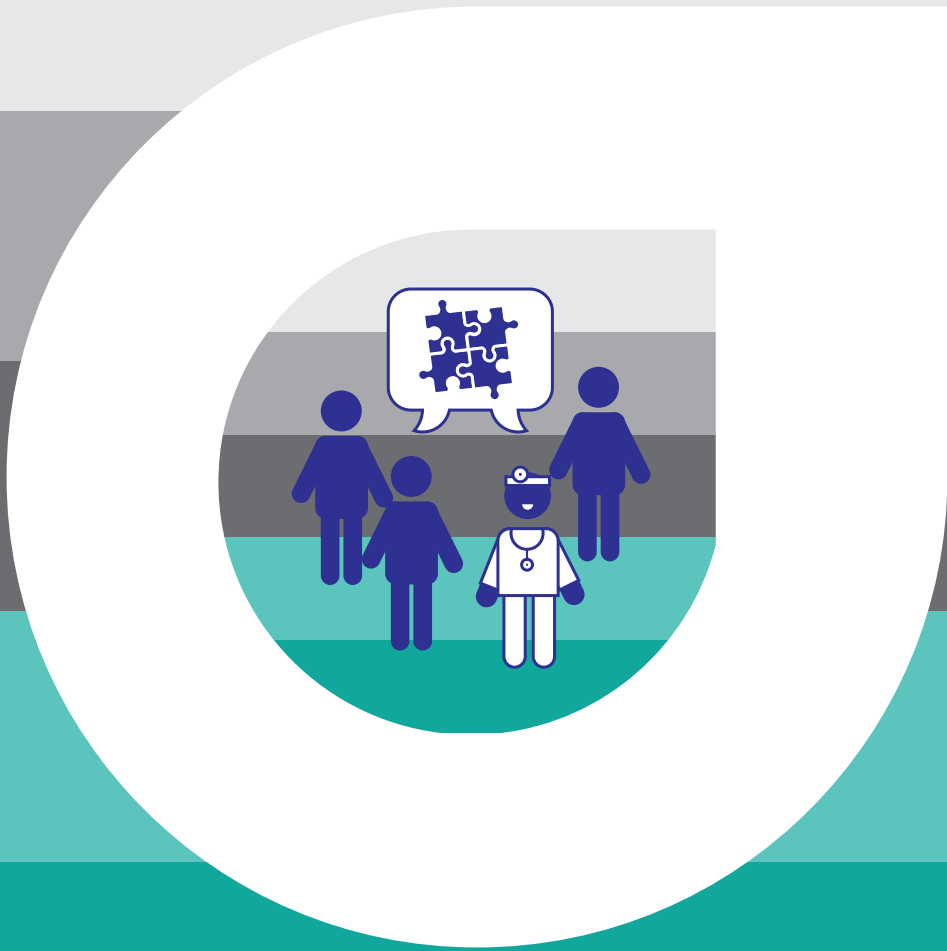
Assessing the impact on outcomes of faculty development initiatives (particularly in terms of distal impact on changes in student behaviour) is difficult due to a limited focus in the literature on systematic evaluations of interventions using rigorous methodologies. It seems that faculty development does positively impact on educational practices, and possibly on outcomes, but a supportive faculty environment, with rewards and incentives for teaching, requires broader institutional change. Further research on outcomes is needed.

Recommendations for policy changes include:

- (a) organizational change to support effective faculty development;
- (b) encouraging a change of culture within educational institutions;
- (c) shifting towards evidence-based education;
- (d) embedding faculty development in accreditation processes;
- (e) developing strategies to overcome barriers.

These recommendations apply to health professional schools, governments, funders, accrediting bodies, international organizations and donors.

There is an enormous need for more health care professionals trained in methods of educating others so that health science education will continue to be responsive to driving forces of change. (2)



1. Background

1.1 Defining the term “faculty development”

The literature suggests that faculty development is a *planned* programme of events aimed at *preparing individuals* for their roles as *teachers, clinicians, researchers and administrators* for the purpose of *enabling the institution* to meet its goals, vision and mission (3,4). McLean et al. (3) extend this definition to include meeting social and moral responsibilities to the communities which the institution serves, thus emphasizing the social accountability mandate of health professions training.

Indeed, the entire educational spectrum, including curriculum content and structure, learning resources allocation, teaching methods, student assessment, faculty development and evaluation systems, should be shaped to meet both individual and societal needs (5). The terms “staff development” and “faculty development” are used interchangeably in the literature. In this brief, the term faculty development is used, referring specifically to development for the teaching role of faculty; staff development is used to refer to professional development for all members of staff in a range of roles at a health training institution.

It should be noted that most of the literature focuses on medical training, in both undergraduate (medical practitioner/physician training) and postgraduate (residency/specialist training) education; limited literature could be found on faculty development in the nursing and midwifery education spheres, but the principles apply across all three fields, and indeed beyond to all health care professionals.

1.2 Issues and challenges related to the development of faculty for the teaching role

1.2.1 Multi-dimensional roles of health professionals

As stated above, the role of the health professional in an education institution is multi-dimensional. For some health professionals, the teaching role is not afforded the same status or priority as that of research, i.e. knowledge generation is seen as more important than knowledge transfer (6).

Knowledge generation contributes to one's academic and career path and brings power, money and privileges (6). Cooke et al. (7) note that the subordination of teaching to research has been long-standing.

Medical students are often taught clinical medicine either by faculty with a limited clinical role (regarding clinical practice as a secondary activity) or by busy clinicians unfamiliar with modern biomedical science and evidence-based practice (who see few academic rewards in leaving busy practices to teach). Historically, it has been assumed that content experts are also, by nature, effective

teachers. However, preparation for teaching is now seen as essential. Educators require a broad range of teaching and learning strategies which are applicable in a range of settings given the increasing complexity and pressures of health care delivery, new approaches to teaching and learning, and competing demands on faculty (1).

1.2.2 Attitudes towards teaching

Intricately linked with issues around the many roles of teachers are teachers' own attitudes towards faculty development. Some pursue an academic career because they want to teach, whereas others see it as a diversion from patient care and research (8). Some teachers may believe that being a good clinician or scientist is sufficient qualification to be a good teacher. Without formal preparation for the teaching role, teachers may lack the confidence needed to use unfamiliar teaching techniques; such reluctance to use methods beyond the traditional may impede creative and novel instruction (8). Hafler et al. (9) describe this as the hidden curriculum of medical education. Strategies are required to address this hidden curriculum and eliminate its impact.

1.2.3 Conflicting opportunities

Recruiting and retaining health professionals who wish to build a teaching career is often challenged by more financially and socially rewarding opportunities afforded in senior clinical or practice positions (6). Several authors suggest that this issue may have even more significance in poorer countries, where the differential between teaching positions on the one hand and research and/or clinical positions on the other is greater (6,10).

1.2.4 Shortage of teachers

Many of the above-mentioned factors contribute to the shortage of teachers, heavy teaching loads and midcareer exhaustion (6). In addition to having sufficient numbers of teachers, there is also a critical need for teaching faculty to be representative of the populations they serve, to ensure the appropriateness of both educational content and style, as well as to provide faculty role models for underrepresented populations. Globally, minority and underserved population groups are underrepresented among teaching faculty in health professional institutions, raising the need to target faculty development programmes in this area (11).

1.2.5 Increased demand for physicians, nurses and midwives

The demand for more physicians, nurses and midwives means more students need to be trained and consequently more teachers are required. Training and retaining faculty is a significant factor in meeting this demand, with the challenge of ensuring that course content is relevant, clinical skills are updated and maintained, and career development opportunities are afforded (12).

1.2.6 Developing health professionals for a teaching role

The question of how teachers can and should be trained for teaching in the health professions is frequently raised. Greysen et al. (10) state that efforts to develop teaching skills in faculty members receive only limited reports in the literature, e.g. training faculty as problem-based learning facilitators. Holmboe et al. (13) report substantial evidence that health professional educators are insufficiently prepared across both traditional competencies of knowledge and skills and more current competencies such as evidence-based practice, interdisciplinary teamwork and academic leadership.

1.2.7 Rewards for teaching

Awards and rewards for teaching are rarely described in the literature (10) although there is much mention of the need for such incentives to help overcome many of the challenges described.

1.2.8 The environment for faculty development

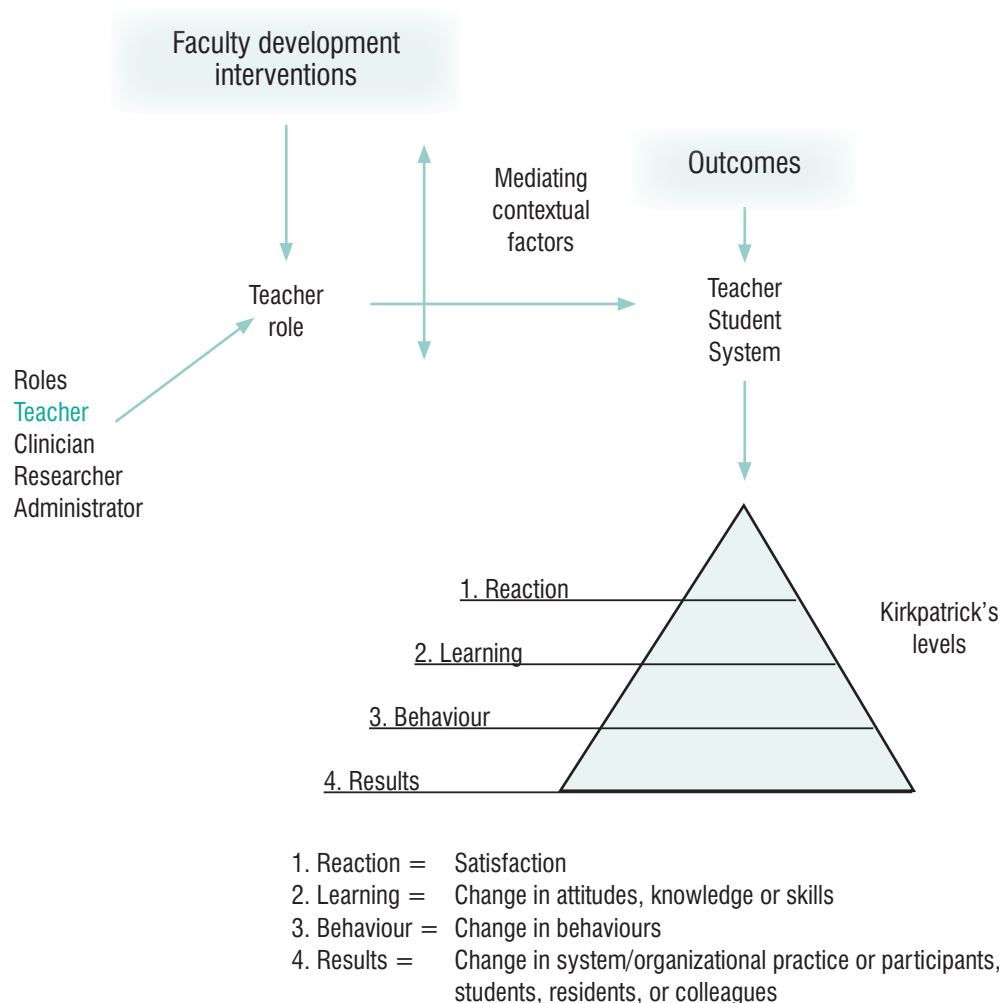
The policy context, within faculties and national higher education frameworks, often facilitates or hinders faculty development. A supportive environment is critical for successful faculty development, yet is seldom described. O'Sullivan and Irby (14) suggest that faculty development is embedded in two communities of practice (the faculty development community and the workplace community) and, to bring about desired change, requires the interaction of four primary components (facilitator, participants, context and programme) with their associated processes (mentoring and coaching; relationships and networks; organizations, systems, and cultures; and tasks and activities). Kirkpatrick (15) also emphasizes the need for a supportive work environment and rewards for change (see section 2.1.3 below). The broader policy environment impacts all of these contextual factors, particularly organizations, systems and cultures.

2. Key issues in faculty development

2.1 A framework for faculty development interventions

A useful analysis of issues relevant to faculty development was published in the Best Evidence Medical Education Guide, *A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education* (1). While this review was restricted to medical education, the authors systematically searched the broader health science literature in order to address the following question: What are the effects of faculty development interventions on the knowledge, attitudes and skills of teachers in medical education, and on the institutions in which they work? The authors of this guide developed the conceptual framework shown in Figure 1 which highlights a number of important areas that are explored in more detail below.

Figure 1. Conceptual framework of faculty development interventions (1)



2.1.1 The various roles of a health professional educator

Figure 1 highlights the different roles of faculty members. The framework demonstrates “that mediating factors beyond specific faculty development activities can influence teacher effectiveness, and that outcomes can be observed at a number of levels” (1). Harris et al. (16) describe the development of a list of competencies in preparing a strategic plan for faculty development in family medicine. Core competencies were developed across seven domains. The final document recognized that all faculty roles have teaching in common, and organized competencies and roles under three headings (Box 1). These competencies provide a useful framework for understanding the roles of teachers in the health professions.

Box 1: Roles of faculty

- Teacher / administrator
- Teacher / educator
- Teacher / researcher

2.1.2 Faculty development interventions targeted at the teacher role

A medical school's most important asset is its faculty. (6)

Interventions targeted at the teacher role need to consider key content areas, the target audience and educational formats (4).

Where the focus is on improving the quality of teaching, the **key content areas** of faculty development should include skill development in clinical teaching and clinical skills teaching, small group facilitation, large group presentations, feedback and evaluation. Faculty need to be assisted to develop or adapt curricula that are context specific and relevant to the populations they serve. Specific competencies such as teaching and evaluating communication skills, professionalism and the use of technology may also be targeted. Further skills are needed in personal development, educational leadership and scholarship, organizational development and change management.

The **target population** should be wider than health professional teachers. Curriculum planners, administrators, health care professionals and organizations must be included in the developmental process. This is essential if issues such as organizational climate and culture are to be considered in teacher development and providing a student-friendly learning environment. Educational and teaching competencies should also be part of student curricula. By engendering an early commitment to teaching in their professional competencies and obligations, students may be developed as future teachers, and their potential as current teachers can also be harnessed.

Educational formats: *Formal* formats for the provision of faculty development include workshops, seminars, short courses, sabbaticals and fellowships with value being found in a variety of experiences. Other formats which should be considered are integrated longitudinal programmes and decentralized activities (4). The integrated longitudinal programmes allow individuals to continue their teaching, research, clinical and other activities while improving their educational knowledge and skills.

Decentralized activities take staff development programmes out of the central base of the university or department, and have the advantage of enabling participation by individuals who may otherwise not have been able to attend. *Informal* approaches may include work-based learning (learning for work, learning at work, learning from work); communities of practice (groups of like-minded, interacting people sharing a passion); organizational support and development (need for faculty orientation and motivation); and mentorship and role modelling (17).

Wilkerson and Doyle (18) have described three features of professional development activities effective in changing physician behaviour, which have an important corollary in faculty development: education based on assessment of needs; opportunities for interaction with peers and practice of the skills to be learnt; and longitudinal, sequenced multi-method activities. They further suggest consideration of the needs of faculty at different levels, such as:

- needs of new faculty as teachers – orientations, on-line modules, etc;
- needs of effective teachers – workshops, teaching evaluations, individual consultation, longitudinal fellowships;
- needs of educational leaders and innovators;
- needs of education scholars.

These also speak to the need for continuous quality improvement strategies that enable the individual teacher to customize their faculty development through self-assessment, peer and student assessment, reflection, planning and mapping of their learning/teaching trajectory.

2.1.3 Mediating contextual factors

Steinert et al. (1) comment on the role of context: the majority of reports describe programmes that were developed to meet the needs of a particular group of faculty members, in a particular context. To the extent that this development and “match” were often successful, it is not surprising that there were many reports of changes in the desired direction (albeit mostly in terms of attitudes and skills). In other words, context is key, and while the results of these studies may not be generalizable, the principles of faculty development may be. Context is important in another way as well. Kirkpatrick (15) describes four conditions necessary for change to occur: the teacher must have the desire to change, knowledge of what to do and how to do it, a supportive work environment, and rewards for changing. The first two elements of change can potentially be achieved through faculty development activities; the last two cannot, and yet that is where change is often most needed (which has important policy implications). Consequently, the need to examine organizational characteristics, as well as the impact of faculty development on the organization, is critical.

2.1.4 The teacher student system

Wilkerson and Doyle (18) describe the importance of appropriate organizational structures and rewards which need ongoing investment of resources and high-level institutional commitment.

Organizational structures to support teaching and teachers:

- Medical /health professional education units: With a range of names reflecting different scopes of work, these are becoming more common, at least in developed countries. Their roles may include faculty development, programme evaluation, educational technology, curriculum support, educational scholarship etc. (19).
- The academy movement: an organizational structure directly tied to supporting the educational mission of a school. Mission statements should reflect the value placed on education and quality

teaching, and policies and procedures should include the importance of teaching in promotion and budgets for educational innovations. International communities of scholars can be valuable in this regard (20).

A reward system that values excellence in education: Structures alone are not sufficient; there needs to be a system of recognition and rewards for excellence in teaching.

2.1.5 Outcomes of faculty development interventions

Kirkpatrick's (15) model for evaluating educational outcomes was used to classify and analyze outcomes. The four levels of outcomes described in the model are: the learners' reactions to the educational experience (i.e. satisfaction); learning (i.e. changes in knowledge, attitudes and skills); changes in behaviours (i.e. changes in practice and the application of knowledge to practice); and results (i.e. changes at the level of the learner and the organization). While these outcomes have been used in individual studies, no single study was found that addressed all of these concepts. (Annex 1 below summarizes the most relevant articles found and provides an overview of reported faculty development outcomes.)

2.2 Innovative experiences and impact: selection, performance and continuous professional development

2.2.1 Selection

Not much evidence exists around strategies or requirements for faculty selection. The primary problem is that there is an absolute shortage of medical educators, particularly outside of metropolitan centres. There are further shortages of faculty who are representative of underserved population groups. Globally, health education institutions face heavy teaching loads, a shortage of educators and competing demands for research and clinical services. In poorer countries, the major constraint is a scarcity of qualified medical educators to teach the next generation of professionals, without whom it would be difficult to expand the workforce in these poor countries (6). The literature review by Greysen et al. (10) indicates that the difficulties of recruiting and retaining academic staff who are able to build the teaching and research missions of schools represent a critical limiting step in efforts to innovate and improve academic medicine in sub-Saharan Africa. Faculty are seldom required to demonstrate teaching experience or evidence of teacher training, much less possess a higher education or medical education qualification, so it is not surprising that many are ill-prepared for their academic responsibilities (3).

On the other hand, South Africa provides an alternative; the South African Nursing Council requires a head of nursing school to hold a teaching and administration qualification (21) and that the qualifications of those who teach in the theoretical and clinical components of the course are "satisfactory in the opinion of the Council" (22).

2.2.2 Performance

Bligh (23) has stated that faculty development programmes are critical signs of the faith that institutions have in their academic staff, and that successful faculty development is expected to result in improved teaching performance and better learning outcomes for students or graduates. Examples of such improvements include the development of new teaching skills or assessment techniques, better ways of planning or implementing curricula, new ways of thinking about the student-teacher relationship, and increased commitment to educational scholarship.

2.2.3 Continuing professional development

The Study of Clinical Teachers in Canadian Faculties of Medicine (24) recommends that faculty development should be presented as an intrinsic part of functioning as a clinical teacher, rather than as an option. Clinical teachers should be required to undertake periodic refresher courses in teaching using alternative formats and teaching methods beyond the standard lecture, including interactivity, simulations, audience response systems, small group and individualized training sessions, sequenced learning and multiple media techniques.

2.2.4 Innovations

The international Best Evidence Medical Education (BEME) Collaboration is committed to moving the education of physicians from “opinion-based education to evidence-based education” (25). It provides medical teachers and administrators with the latest findings from scientifically grounded educational research to provide a basis for informed decisions (www.bemecollaboration.org).

The Foundation for the Advancement of International Medical Education and Research (FAIMER) Institute promotes an international health professions education fellowship that incorporates leadership and management topics, striving to develop a community of educators (www.faimer.org/education/institute).

FAIMER regional institutes have been established in Asia, Africa and Latin America, with evidence that participating faculty are augmenting their knowledge and skills in education, leadership, management and methodology, and carrying benefits to their home institutions (20).

Innovative online courses for clinical teachers are offered by the Association for Medical Education in Europe (AMEE) (www.amee.org), the London Deanery in the United Kingdom (26) and the McMaster University-based Foundation for Medical Practice Education (www.fmpe.org/en/about/index.htm) in Canada.

Another innovation is the short-term placement of graduates from wealthier countries seeking opportunities to contribute in those with fewer faculty members. Such activities, however, should be part of a broader strategy for capacity strengthening in poor countries (6). The model of South-South Cooperation and Twinning partnerships, developed in Southern Africa through the Primafamed Network (www.primafamed.ugent.be/primafamed-edulink) can contribute to this (27). The Cuban example of placing medical educators globally in underserved areas to assist with community-based and primary care-focused physician training is important, but its role in building capacity of local faculty has not been evaluated.

2.2.5 Impact

Determining the impact of effective teaching is a challenge as many other factors may influence trainee performance. This impact may be measured as educational outcomes (e.g. student learning), practice outcomes (e.g. a change in trainee practice) or health outcomes (e.g. an effect on patient or population health) (28). Cassel (29) argues for a clear link between the quality of medical education and the quality of clinical practice, which should be the goal of that education.

2.3 Outcomes of faculty development

Overall, assessing the impact or outcomes of faculty development initiatives is difficult due to limited focus in the literature on systematic evaluations of interventions using rigorous methodologies. Those evaluations that have occurred report largely on faculty satisfaction with the programme, or changes in faculty knowledge, attitudes or skills as a result of the intervention (1). However, it is possible to draw inferences from the existing literature, despite these methodological issues. Overall the faculty development literature supports the following outcomes.

- *Reaction*: Overall, participants were very satisfied with faculty development programmes and found programmes to be acceptable, useful and relevant to their objectives; for examples, see Marcondes (30), Lewis and Baker (31).
- *Learning*: Participants fairly consistently reported an improvement in attitudes towards faculty development, continuing professional education and/or teaching. Many studies reported increased knowledge of educational principles and gains in teaching skills, usually self-reported (11,32). Where formal tests of knowledge were used, significant gains were shown (33,34).
- *Behaviour*: Changes in teaching behaviour were consistently self-reported by participants (35,36, 37,38) and were also detected by students in a small number of studies (39).
- *Results*: Changes in organizational practice were infrequently investigated, often considered beyond the scope of faculty development initiatives. However, organizational structures and climates that value and prioritize faculty development are vital to a culture of continuous education and self-improvement.
- *Outcomes*: Arguably the most important impact of any faculty development programme is the impact that developing the skills of teachers has on the practice of their students. Outcomes in terms of student learning and behaviour were not frequently investigated, and no papers in our review reported on changes at the level of the teacher's students.

Overall, the key features of effective faculty development contributing to effectiveness include the use of experiential learning, provision of feedback, effective peer and colleague relationships, well-designed interventions following teaching and learning principles, and use of diverse educational methods within single interventions (1,40,41).

3. Relevance to policy guidelines

WHO estimates of the workforce density required to meet the health-related Millennium Development Goals suggest there is a critical global deficit of 2.4 million doctors, nurses and midwives (42). Likewise, there is a severe shortage of educators to train current and increasing numbers of health professional students. In response, two resolutions at the 64th World Health Assembly (May 2011) committed member states to supporting the transformative scale up of health professional education to increase the quantity, quality and relevance of health professionals and to improve their impact on population health. Faculty development is integral to health professional education reform given the vital role that faculty play in producing and shaping graduates (6). Several issues should be considered in the “quantity-quality-relevance” framework when related specifically to faculty development.

- *Quantity:* There is insufficient teaching faculty to educate current numbers of health professional students. This is as a result both of absolute shortages and of inadequate selection/recruitment, development and retention of faculty. Significant increases in student volumes require yet more faculty to be trained and retained.
- *Quality:* Training and retaining faculty for teaching the health professionals of the future is a vital component of ensuring appropriate and relevant curricula which reflect population health needs. Further, the quality of the teaching and learning environment can influence the capacity of faculty to effectively teach a relevant and dynamic curriculum. Many low-resource settings lack the infrastructure and equipment required for high quality, appropriate and relevant education of health professionals. While there is a move towards evidence-based health education, there is little robust evidence evaluating the impact or quality of faculty development interventions much beyond satisfaction of participants. To advance our understanding of the role and impact of faculty development, future research in this area must be of sound design and seek to measure impact on health outcomes. Peer consultation and inter-faculty review of faculty development programmes can assist in ensuring quality.
- *Relevance:* Health professional education must be relevant and conducive to producing graduates who are prepared to take on challenges of current and changing population health needs. Few articles were identified that specifically detailed faculty development programmes aimed at improving the relevance of graduates and ensuring graduates are equipped for, and inclined towards, practice which may address identified health concerns in the community. This is a significant knowledge gap and requires the implementation of faculty development initiatives which not only aim to increase the amount of teaching undertaken but also target key aspects of curriculum development that may lead to more effective health professionals with skills that are of greater relevance to population health needs. These initiatives require robust evaluation to expand our understanding of the impact of faculty development programmes on student learning outcomes and their subsequent influence on population health.

4. Policy options

There are a number of policy options available to encourage transformation of the health professional workforce through improved faculty development programmes. While the literature does not provide conclusive evidence of outcomes for graduates or patients, this should not prevent institutions from making changes to faculty development and conducting robust evaluation of these to contribute to the evidence base. Indeed, what the literature does provide are some aspirational goals and suggestions which provide some basis for the following policy options. Implementation will depend on context and available resources.

The greatest investment of any educational institution is its teachers, and the reason for that investment is its students. Teachers develop; learners develop; the institution grows as well. (18)

Significant reform of faculty development programmes and expectations may be more feasible in resource-rich settings that can afford to implement several policy recommendations. The policy options below have been cast into a number of subcategories; however, many of these are inter-linked (e.g. organizational support will also have an influence on the institutional teaching culture).

- *Encouraging a change of culture within educational institutions.* Given the low emphasis placed on faculty development to date, the culture in health professional education institutions requires significant changes. The status of teaching must be elevated within these institutions. Many authors have pointed to the need to improve (or establish) an incentive structure to reward excellence in teaching (3,12) which will help to afford teaching comparable status to that of research or clinical practice. This may encourage more staff to be involved in faculty development initiatives as well as improving recruitment and retention in teaching positions. Educational institutions should clearly convey expectations of staff engagement in faculty development, actively support staff, and hold individual faculty members accountable when they do not take teaching responsibilities seriously or for inadequate quality or inconsistent teaching (8).
- *Organizational changes to support effective faculty development.* These include:
 - a. Establishing education units within health professional teaching institutions to ensure faculty development can be coordinated, administered and monitored, with strategic consideration of faculty development and curricular issues (19). If not available locally, links to international communities of practice should be established.
 - b. Establishing a team of faculty members whose primary responsibility is to teach. Just as research staff are currently employed in positions primarily to undertake research, teaching staff should be funded, responsible and rewarded for good teaching (43). At the same time teaching should not be the sole preserve of these faculty members: administrators, educators, researchers and clinicians should all be expected to share in the teaching role, just as teachers should contribute to these other roles.
- *Shifting towards evidence-based education.* Moving towards health professional education that is based on strong evidence will require that future research and evaluation in faculty development are designed in a robust manner to produce results that will inform the knowledge base for ongoing

development of teaching staff. In addition, it will be necessary for these research designs to be more ambitious in attempting to understand optimum processes and content as well as outcomes of faculty development for health professional trainees and subsequent impact on patients and population health. To support this, external funding for centres of research excellence in faculty development should be established to encourage, contribute to, monitor and disseminate the best evidence in faculty development (43). International or regional evidence-based competencies should be established for teachers involved in medical, nursing and midwifery education; common core competencies that are global can be adapted at regional and local levels in relation to cultural or other contextual factors. Moving to an integrated system that links the clinician-learner, best evidence, systems of health care and education may improve graduates' capacity to attain quality standards, deliver relevant health care and obtain better patient outcomes (44).

- *Addressing research gaps.* High quality research is needed to determine, inter alia, whether health professional education programmes do increase confidence in teaching, whether faculty development programmes to develop teaching skills make a difference to students' learning and throughput rates, whether developing teaching skills in students influences their abilities as future teachers, and the influence that teaching rewards have on faculty development. Further, as above, there is a pressing need to understand the effect of faculty development initiatives on patient outcomes and the health of populations.

Embedding faculty development in accreditation processes. If faculty development for teachers (and evidence of addressing teachers' needs through a variety of programmes) was embedded in ongoing institutional accreditation then it would be difficult for deans and educational managers to ignore the need for teachers to participate in faculty development and quality assurance of their training programmes (3,43). At an individual level, requiring teachers to demonstrate achievement of evidence-based teaching competencies to maintain teaching accreditation would convince faculty of the importance of faculty development (43).

Overcoming barriers. Strategies must be sought to overcome environmental barriers which may discourage faculty development programmes, including time and space constraints, financial barriers and limited resources including instructional, human and technological resources (8).

Improving community responsiveness. There is international recognition of the need for social accountability in health professional education. As epitomized in the Global Consensus for Social Accountability of Medical Schools guideline (5), faculty members need to be trained in community-based education, community engagement, equity, and other aspects of social responsiveness. These universal concepts should be incorporated into all health professional education programmes, and thus faculty development programmes, with local adaptation where necessary.

Lower resource settings may require a stepwise approach to reform. Minimal changes to existing structures may, at least, entail better research and evaluation of current faculty development interventions. Given the scarcity of trained faculty in poorer countries (6), initiatives aimed at encouraging and equipping current students to be the teachers of the future may be one priority area for change. At the very least, a baseline survey is required upon which incremental changes can be built in these settings. Research around faculty development programmes must look beyond measuring participant satisfaction and move towards assessing outcomes for learners and their subsequent practice in the community. Although more difficult, this information is required to build the evidence base for faculty development programmes which ultimately aim to improve population health outcomes.

5. Recommendations

For health professional schools/health science faculties:

- ensure teaching has equal stature in recruitment and promotion;
- consider an academic track for teaching staff, who are equally rewarded;
- ensure all new teaching staff are given appropriate orientation and educational training;
- implement ongoing faculty development programmes using the range of options described;
- create health professional education units and/or teaching and learning academies.

For governments, funders and accrediting bodies:

- higher education policies should provide for mandatory faculty development programmes that are linked to funding, promotion and reward;
- faculty development programmes should be demonstrated and evaluated as part of accreditation including resourcing and evidence of addressing both individual and organizational needs;
- ensure the educational missions of institutions are matched by organizational structures and programmes;
- promotion criteria for teaching faculty should be reviewed as part of funding and accreditation;
- ensure ring-fenced budgets are available to support clinical educators and education units;
- provide resources for faculty development initiatives;
- develop an evidence-based set of competencies for teaching across the education continuum.

For international organizations and donors:

- develop international, inter-professional initiatives in faculty development, to facilitate the development of international standards and learning across disciplines and professions;
- provide open-access, web-based faculty development programmes;
- facilitate international partnerships to allow faculty from developed countries to support faculty in developing countries, with meaningful two-way exchanges and agendas built on local needs;
- support initiatives such as the FAIMER regional institutes and other educational innovations.

6. Conclusion

Faculty development is complex, depending on the interplay of many inter-related factors, including the multiple roles of health professionals, actual interventions aimed at the teacher role, mediating contextual factors, the teacher-student system, and outcomes. Steinert's (4) practical suggestions for designing a staff development programme are summarized in Box 2.

Box 2: Considerations when designing a faculty development programme (4)

- Understand the institutional/organizational culture
- Determine appropriate goals and priorities
- Conduct needs assessments to ensure relevant programming
- Develop different programmes to accommodate diverse needs
- Incorporate principles of adult learning and instructional design
- Offer a diversity of educational methods
- Promote “buy-in” and market effectively
- Work to overcome commonly encountered challenges
- Prepare staff developers
- Evaluate — and demonstrate — effectiveness
- Provide and offer peer programme consultation to enhance faculty development initiatives

Faculty development can help create a collegial learning community that shares a vision for personal excellence, continuous learning, and scholarship in teaching; promotes continuous quality improvement through collaborative reflection and action; and makes the contributions of scholarly teachers and educational scholars visible and rewarded. (18)

Annex 1. Data Extraction Sheet: Key research articles on faculty development (FD)

Author/s	Title	Source	Setting	Participants	Methodology	Key Findings	Quality of Paper (1 = low credibility; 2 = moderate credibility; 3 = high credibility)	Evidence of impact/outcomes (Steinert, Mann et al. 2006)
(Alsultan 2011)	What makes an effective clinical trainer?	Saudi J Kidney Dis Transpl 22(6): 1229–1235	University	Residents / students- medicine	Literature review	Descriptors for effective clinical teachers were categorized into 3 main classes: Teaching skills; Personality; Attitude	2	N/A
(Armstrong & Barsion 2006).	Using an outcomes-logic-model approach to evaluate a faculty development program for medical educators	Academic Medicine 81(5): 483–488.	US Medical school	16 faculty who completed Harvard Macy training program, and some small number of faculty	Outcomes logic evaluation with interviews and online questionnaires	13/16 (81%) reported better knowledge and 63% reported change in teaching behavior (fewer lectures). 13/16 (81%) reported stronger commitment to medical education (ME).	2 (design sound but extremely low numbers)	Yes, Level 3
(Beck, Wingard et al. 2008).	Addressing the health needs of the underserved: A national faculty development program	Academic Medicine 83(11): 1094–1102.	US national, medical school	107 medical faculty from across US and Puerto Rico who attended FD program (25% from underserved groups)	Pre and post survey and interviews. No comparison group.	Self-reported increased confidence and satisfaction in ME	2	Yes, Level 2B
(Berbano, Browning et al. 2006).	The impact of the Stanford Faculty Development Program on ambulatory teaching behavior	Journal of General Internal Medicine 21(5): 430–434.	US, medical school	8 internal medicine faculty who took part in 7, 2 hour FD sessions	Pre and post video interview with standardized learner	Observed increase in higher-level, analytic questions (44% vs 55%, $P < .0001$). The quality of feedback also improved, with less “minimal” feedback (87% vs 76%, $P < .0005$) and more specific feedback (13% vs 22%) provided	3	Yes, Level 3 Strong evidence for change in behavior. Numbers small.

Author/s	Title	Source	Setting	Participants	Methodology	Key Findings	Quality of Paper (1 = low credibility; 2 = moderate credibility; 3 = high credibility)	Evidence of impact/ outcomes (Steinert, Mann et al. 2006)
(Branch Jr, Frankel et al. 2009).	A good clinician and a caring person: Longitudinal faculty development and the enhancement of the human dimensions of care	Academic Medicine 84(1): 117–125	USA, academic medicine	29 participants in FD program and 47 controls from same 5 medical schools	2 year Prospective cohort study (controlled). HTPE teaching assessed by student questionnaire	Interested in outcomes in “humanistic teaching” from focused FD program. Significant improvement in humanistic teaching if completed the program.	3	Yes, Level 3
(Broad, Walker et al. 2011).	Developing a “model of transition” prior to preceptorship	British J of Nursing, 20: 1298–1301	University hospital, UK	Nurses / midwives	Descriptive	Description of a ‘transition’ module	2	No
(Burdick, Diserens et al. 2010).	Measuring the effects of an international health professions faculty development fellowship: The FAIMER Institute.	Medical Teacher, 32(5), 414–421.	International, Academic medicine	FAIMER fellows	Retrospective pre/post-test and interview to assess effectiveness of FAIMER programs	Participants described changes in skills, attitudes and leadership which they applied at their home institutions.	2	Yes, Level 4A. http://www.faimer.org/education/
(Burdick, Morahan et al. 2007).	Capacity building in medical education and health outcomes in developing countries: The missing link.	Education for Health: Change in Learning and Practice, 20(3).	International – medical education	35 FAIMER fellows	Evaluation of effects	FAIMER framework of capacity building programs: 1) identify individuals with potential to be agents for change; 2) effective learning intervention that is relevant; 3) real-life 4) sustainable career path. 23% of curriculum innovation projects were directly related to community health. The link between capacity building in medical education and improved health can be demonstrated.	2	Yes, Level 4A and attempting to assess 4B outcomes

Author/s	Title	Source	Setting	Participants	Methodology	Key Findings	Quality of Paper (1 = low credibility; 2 = moderate credibility; 3 = high credibility)	Evidence of impact/ outcomes (Steinert, Mann et al. 2006)
(Cook 2009).	Mapping the work-based learning of novice teachers: Charting some rich terrain	Medical Teacher. 31: e608–e614	University hospital	12 novice teachers from school of dentistry and medicine	Qualitative – semi-structured, in-depth interviews	Non-formal teaching is a significant aspect in the development of novice teachers	3	N/A
(Davis, Karunathilake et al. 2005).	AMEE Guide #28: The development and role of departments of medical education	Medical Teacher. 27(8): 665–675	University	N/A	Descriptive	Guidelines. Suggests some of the challenges faced in setting up such a department.	2	N/A
(Dieter 2009).	A faculty development program can result in an improvement of the quality and output in medical education, basic sciences and clinical research and patient care.	Medical Teacher, 31(7), 655–659.	Germany Academic medicine	One medical school	Descriptive – mixed evaluation	Systematization of ME at one school led to improvement of the quality and output of medical education and was accompanied in an improvement of the quality and output of basic sciences and clinical research and interdisciplinary patient care.		Yes, Level 3 and 4A
(Gierde, Hla et al. 2008).	Long-term outcomes of a primary care faculty development program at the University of Wisconsin	Family Medicine, 40(8), 579–584.	USA, primary care preceptors	80 primary care preceptors who had undergone FD	Post-survey	High satisfaction and reported changes in skills and behavior	1–2	Yes, Levels 1, 2A, 2B, 3
(Gozu, Windish et al. 2008).	Long-term follow-up of a 10-month program in curriculum development for medical educators: A cohort study.	Medical Education, 42(7), 684–692.	USA Academic medicine	58 Faculty who had done FD training and 50 controls	Prospective cohort study with	Demonstrated significant changes in knowledge, skills and behavior sustained after intervention	3	Yes, Level 2A, 2B and 3

Author/s	Title	Source	Setting	Participants	Methodology	Key Findings	Quality of Paper (1 = low credibility; 2 = moderate credibility; 3 = high credibility)	Evidence of impact/outcomes (Steinert, Mann et al. 2006)
(Harris, Krause et al. 2007).	Academic competencies for medical faculty	Family Medicine. 39(5): 343–50	University	N/A	Literature review	Teacher/administrator; Teacher/educator; Teacher / researcher; Teacher / clinician	2	N/A
(Hatem, Searle et al. 2011).	The educational attributes and responsibilities of effective medical educators	Academic Medicine 86(4): 474–480	University	Literature review and then consensus decision making.	Descriptive	Identifies 5 key points for FD to promote educational attitudes, knowledge and skills	2	N/A
(Knight, Cole et al. 2005).	Long-term follow-up of a longitudinal FD program in teaching skills	Journal of General Internal Medicine. 20:721–725	USA; University & hospital based	242 FD participants, 121 in a comparison group	Longitudinal follow-up of intervention and comparison group.	Intervention group completed Johns Hopkins FD program in Teaching Skills. Participation was associated with continued teaching activity, desirable teaching behaviors.	2	Yes, Level 3
(Knight, Carrese et al. 2007).	Qualitative assessment of the long-term impact of a FD program in teaching skills.	Medical Education 41(6): 592–600.	US, medical school	246 faculty members in medical education	Cross sectional retrospective survey (mostly qualitative) – no pretest/ comparison	Improved knowledge and skills reported.	1	Yes, Level 2A
(Lee, Yang et al. 2011).	Clinical instructors' perception of a faculty development program promoting postgraduate year-1 residents' ACGME six score competencies: A 2 year study	BMJ Open. 12	Taiwan; hospital-based	134 medical supervisors	Self-reported questionnaires post-intervention	FD had positive outcomes re: preparedness to teach to the 6 ACGME domains/competencies and application of learnt behaviors	1–2	Yes, Level 3 – self reported change in behaviors

Author/s	Title	Source	Setting	Participants	Methodology	Key Findings	Quality of Paper (1 = low credibility; 2 = moderate credibility; 3 = high credibility)	Evidence of impact/ outcomes (Steinert, Mann et al. 2006)
(Lewis & Baker 2009).	Expanding the scope of faculty educator development for health care professionals	The Journal of Educators Online. 6 (1)	USA, hospital-based	N/A (though there have been 17 program graduates)	Descriptive	Describes the evolution of Cincinnati Children's Hospital Medical Centre into a multilevel program culminating in an online Masters degree in education	1	Yes, Level 1
(MacDougall & Drummond 2005).	The development of medical teachers: an enquiry into the learning histories of 10 experienced medical teachers	Medical Education. 39: 1213–1220	University hospital	10 consultants	Qualitative–semi-structured interviews	4 themes: • acquisition of educational knowledge and skills • modeling and practice of teaching skills • encouragement and motivation of teachers • constraints on teacher development: the dilemmas of teaching	3	N/A
(Marcondes Carvalho Jr 2008).	Online faculty development for community health in Brazil	Medical Education. 42: 513–543	Brazil, University & community-based	—	Descriptive	Description of using online technology to support FD in Family Health Care Units.	1	Yes, Level 1
(Mazotti, Moylan et al. 2010).	Advancing geriatrics education: An efficient faculty development program for academic hospitalists increases geriatric teaching	Journal of Hospital Medicine. 5 (9): 541–546	USA, hospital-based	36 hospitalist trainees, 56 residents, 15 session leaders.	Cross-sectional survey	Evaluation of teach the teacher program in geriatrics for hospitalists. Resulted in increased self-efficacy re: teaching geriatric skills to residents, increased teaching, increased resident geriatric skills practice.	2	Yes, Level 3 (frequency of geriatrics teaching by hospitalists as reported by residents)
(McKimm & Swanwick 2010).	Web-based faculty development: e-Learning for clinical teachers in the London Deanery	The Clinical Teacher 7:58–62	London Deanery	N/A	Descriptive of an innovation	N/A	2	N/A

Author/s	Title	Source	Setting	Participants	Methodology	Key Findings	Quality of Paper (1 = low credibility; 2 = moderate credibility; 3 = high credibility)	Evidence of impact/outcomes (Steinert, Mann et al. 2006)
(Ramani 2006).	Twelve tips to promote excellence in medical teaching	Medical Teacher. 28(1): 19–23	N/A	N/A	Descriptive	N/A	N/A	N/A
(Rosenbaum, Lenoch et al. 2005).	Outcomes of a teaching scholars program to promote leadership in faculty development	Teaching and learning in medicine: an international journal. 17:3, 247–252	USA, University based	43 staff	Descriptive	Outcome measures mostly around staff FD engagement after enrolling in a teaching scholars program.	1	Yes, Level 3 (staff involvement in FD activities)
(Ross, Kumagai et al. 2011).	Using film in multicultural and social justice faculty development: Scenes from Crash.	Journal of Continuing Education in the Health Professions 31(3): 188–195.	USA, University based	25 med faculty members	Post workshop evaluation only Descriptive	Multimedia workshop for teaching cross cultural awareness to med faculty found useful in increasing preparedness to manage class discussions of cross-cultural issues.	1	Level 2A, weak evidence
(Rust, Taylor et al. 2006).	The Morehouse faculty development program: Evolving methods and 10-year outcomes	Family Medicine 38(1): 43–49.	USA Family medicine faculty	113 Family Medicine faculty with a focus on under-represented minorities.	10 year follow up of FD Unmatched prospective cohort with pre and post skills rating (by self)	FD program involves one year longitudinal program or 4–6 weeks modules. Outcomes include rise in numbers spending time teaching, and increase in self-reported rise in academic skills from 2.7 to 4.1/5.	2	Yes, Levels 2B/3
(Sarikaya, Kalaca et al. 2010).	The impact of a faculty development program: Evaluation based on the self-assessment of medical educators from preclinical and clinical disciplines.	American Journal of Physiology - Advances in Physiology Education 34(2): 35–40.	USA University	225 faculty in clinical and pre-clinical medical school departments	Uncontrolled Cross-sectional study with post-test 1–2 years after intervention	Faculty-training program consisted of “training skills” and “student assessment instruments” courses. Clinicians adapted teaching according to clinical context and found it beneficial. statistically significant correlation between benefit and behavior change.	1-2	Yes, Some level 3 outcomes but uncontrolled

Author/s	Title	Source	Setting	Participants	Methodology	Key Findings	Quality of Paper (1 = low credibility; 2 = moderate credibility; 3 = high credibility)	Evidence of impact/outcomes (Steinert, Mann et al. 2006)
(Srinivasan, Li et al. 2011).	Teaching as a competency: Competencies for medical educators	Academic Medicine 86(10): 1211–1220	US and Canada. Medical faculty	University based	Conceptual model based on literature review.	6 core teaching competencies identified and four specialized teaching competencies	2	No
(Steinert, Cruess et al. 2007).	Faculty development as an instrument of change: A case study on teaching professionalism	Academic Medicine 82(11): 1057–1064	Canada, University	Medical faculty	Description and outcomes of one FD program	FD led to organizational change in teaching of professionalism	1-2	Yes, Level 4A but weak evidence
(Steinert, Mann et al. 2006).	A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEEME Guide No. 8.	Medical Teacher 28(6): 497–526	N/A	Medical faculty	Well-designed systematic review	Key features: • role of experiential learning • value of feedback • importance of peers • adherence to principles of teaching and learning • use of multiple instructional methods to achieve aims • observations re FD interventions • role of context • nature of participation • value of extended program • use of 'alternative' practices	3	Yes
(Steinert & McLeod 2006).	From novice to informed educator: The Teaching Scholars Program for Educators in the Health Sciences	Academic Medicine 81(11): 969–974	Canada, University	N/A	Description of longer term outcomes of 34 graduates of FD program	No pre-test, but stated that self-reported changes in teaching behavior and attitudes sustained.	1	Yes, Level 2B
(Steinert 2011).	Faculty development: the road less travelled	Academic Medicine 86(4): 409–411	N/A	N/A	Commentary	Useful figure for FD and approaches used	2	N/A

Author/s	Title	Source	Setting	Participants	Methodology	Key Findings	Quality of Paper (1 = low credibility; 2 = moderate credibility; 3 = high credibility)	Evidence of impact/outcomes (Steinert, Mann et al. 2006)
(Thorndyke, Gusic et al. 2008).	Functional mentoring: A practical approach with multilevel outcomes	Journal of Continuing Education in the Health Professions 28(3): 157–164	US, medical school	165 faculty members in CME program	Cross-sectional self-reported survey-no pretest or comparison	Very positive responses in terms of positive effect on own knowledge and skills; 92% said mentoring would have sig impact on career and 86% on their organization	1	Yes, Levels 3 and 4A (self-reported)
(Windish, Gozu et al. 2007).	A ten-month program in curriculum development for medical educators: 16 Years of experience	Journal of General Internal Medicine 22(5): 655–661	US, med school	138 faculty and fellows in medical education and 63 matched nonparticipants.	Prospective cohort study with pre and post-test and control group	Many produced curricula as a result. Participant self-reported skills in curricular development, implementation, and evaluation improved from baseline ($p < .0001$), whereas no improvement occurred in the comparison group	3	Yes, Level 2B. Well-designed study.

References

1. Steinert Y et al. A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No. 8. *Medical Teacher*, 2006, 28(6):497–526.
2. Cusimano MD. A compendium of higher education opportunities in health professions education. *Academic Medicine*, 1998, 73(12):1255–1259.
3. McLean M et al. Faculty development: yesterday, today and tomorrow. *Medical Teacher*, 2008, 30(6):555–84.
4. Steinert Y. Staff development. In: Dent J, Harden R, eds. *A practical guide for medical teachers*. Elsevier, 2009:391–397.
5. Global consensus for social accountability of medical schools, 2011. Position statement available from <http://www.healthsocialaccountability.org>.
6. Frenk J et al. Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world. *The Lancet*, 2010, 376(9756):1923–1958.
7. Cooke M et al. American medical education 100 years after the Flexner Report. *New England Journal of Medicine*, 2006, 355:1339–1344.
8. DaRosa DA et al. Barriers to effective teaching. *Academic Medicine*, 2011, 86(4):453–459.
9. Hafler JP et al. Decoding the learning environment of medical education: A hidden curriculum perspective for faculty development. *Academic Medicine*, 2011, 86(4):440–444.
10. Greysen S et al. Medical education in sub-Saharan Africa: A literature review. *Medical Education*, 2011, 45:973–986.
11. Beck E et al. Addressing the health needs of the underserved: A national faculty development program. *Academic Medicine*, 2008, 83(11):1094–1102.
12. Celletti F et al. Educating a new generation of doctors to improve the health of populations in low- and middle-income countries. *PLoS Medicine*, 2011, 8(10):e1001108.
13. Holmboe ES et al. Faculty development in assessment: The missing link in competency-based medical education. *Academic Medicine*, 2011, 86(4):460–467.
14. O'Sullivan PS, Irby DM. Reframing research on faculty development. *Academic Medicine*, 2011, 86(4):421–428.
15. Kirkpatrick D. *Evaluating training programs: The four levels*. San Francisco, Berrett-Koehler Publishers, 1994.
16. Harris DL et al. Academic competencies for medical faculty. *Family Medicine*, 2007, 39(5):343–350.

17. Steinert Y. Developing medical educators: a journey, not a destination. In: *Understanding medical education: Evidence, theory and practice*. Swanwick T, ed. Dundee, Association of the Study of Medical Education, 2010:403–418.
18. Wilkerson L, Doyle L. Developing teachers and developing learners. In: *Medical education theory and practice*. Dornan T, et al. eds. Edinburgh, Churchill Livingstone Elsevier, 2011:317–337.
19. Davis M et al. AMEE Education Guide no. 28: The development and role of departments of medical education. *Medical Teacher*, 2005, 27(8):665–675.
20. Burdick WP et al. Measuring the effects of an international health professions faculty development fellowship: The FAIMER Institute. *Medical Teacher*, 2010, 32(5):414–421.
21. South African Nursing Council. Regulations relating to the approval of and the minimum requirements for the education and training of a nurse (general, psychiatric and community) and midwife leading to registration (R425 as amended by R753 of 1988). Available at www.sanc.co.za/regulations
22. South African Nursing Council. Regulations relating to the course in clinical nursing science leading to registration of an additional qualification (R212 amended by R74 of 1997). Available at www.sanc.co.za/regulations
23. Bligh J. Faculty development. *Medical Education*, 2005, 39(2):120–121.
24. Cook D et al. *Study of clinical teachers in Canadian faculties of medicine: a discussion paper – 2009*. Ottawa, Association of Faculties of Medicine of Canada, 2009.
25. Harden R et al. BEME Guide No. 1: Best evidence medical education. *Medical Teacher*, 1999, 21(6):553–562.
26. McKimm J, Swanwick T. Web-based faculty development: e-learning for clinical teachers in the London Deanery. *The Clinical Teacher*, 2010, 7:58–62.
27. du Toit L. *South-south cooperation in health science education: A literature review*. Johannesburg, Wits Centre for Rural Health, 2011.
28. Ramani S. Twelve tips to promote excellence in medical teaching. *Medical Teacher*, 2006, 28(1):19–23.
29. Cassel C. Quality of care and quality of training: A shared vision for internal medicine? *Annals of Internal Medicine*, 2004, 140:927–928.
30. Marcondes Carvalho P. Online faculty development for community health in Brazil. *Medical Education*, 2008, 42(5):540.
31. Lewis KO, Baker RC. Expanding the scope of faculty educator development for health care professionals. *Journal of Educators Online*, 2009, 6(1).
32. Gjerde CL et al. Long-term outcomes of a primary care faculty development program at the University of Wisconsin. *Family Medicine*, 2008, 40(8):579–584.
33. Rust G et al. The Morehouse faculty development program: Evolving methods and 10-year outcomes. *Family Medicine*, 2006, 38(1):43–49.
34. Knight AM et al. Long-term follow-up of a longitudinal faculty development program in teaching skills. *Journal of General Internal Medicine*, 2005, 20(8):721–725.

35. Armstrong EG, Barsion SJ. Using an outcomes-logic-model approach to evaluate a faculty development program for medical educators. *Academic Medicine*, 2006, 81(5):483–488.
36. Sarikaya O et al. The impact of a faculty development program: Evaluation based on the self assessment of medical educators from preclinical and clinical disciplines. *American Journal of Physiology — Advances in Physiology Education*, 2010, 34(2):35–40.
37. Lee FY et al. Clinical instructors' perception of a faculty development programme promoting postgraduate year-1 (PGY 1) residents' ACGME six core competencies: A 2-year study. *BMJ Open*, 2011, 1(2).
38. Branch Jr WT et al. A good clinician and a caring person: Longitudinal faculty development and the enhancement of the human dimensions of care. *Academic Medicine*, 2009, 84(1):117–125.
39. Steinert Y et al. Faculty development: if you build it, they will come. *Medical Education*, 2010, 44(9):900–907.
40. Steinert Y. Faculty development: The road less traveled. *Academic Medicine*, 2011, 86(4):409–411.
41. *Working together for health: The World Health Report 2006*. Geneva, World Health Organization, 2006.
42. Hatem C et al. The educational attributes and responsibilities of effective medical educators. *Academic Medicine*, 2011, 87:474–480.
43. Davis D et al. Rethinking CME: an imperative for academic medicine and faculty development. *Academic Medicine*, 2011, 86(4):468–473.

Other bibliography

- Alsultan M. What makes an effective clinical trainer? *Saudi Journal of Kidney Disease Transplantation*, 2011, 22(6):1229–1235.
- Berbano EP et al. The impact of the Stanford Faculty Development Program on ambulatory teaching behavior. *Journal of General Internal Medicine*, 2006, 21(5):430–434.
- Broad P et al. Developing a 'model of transition' prior to preceptorship. *British Journal of Nursing*, 2011, 20(20):1298–1301.
- Burdick WP et al. Capacity building in medical education and health outcomes in developing countries: The missing link. *Education for Health: Change in Learning and Practice*, 2007, 20(3).
- Cook V. Mapping the work-based learning of novice teachers: Charting some rich terrain. *Medical Teacher*, 2009, 31:e608–e614.
- Dieter PE. A faculty development program can result in an improvement of the quality and output in medical education, basic sciences and clinical research and patient care. *Medical Teacher*, 2009, 31(7):655–659.
- Gozu A et al. Long-term follow-up of a 10-month programme in curriculum development for medical

educators: A cohort study. *Medical Education*, 2008, 42(7):684–692.

Johansson J et al. Clinical teaching improvement: The transportability of the Stanford Faculty Development Program. *Medical Teacher*, 2009, 31(8):e377–82.

Knight AM et al. Qualitative assessment of the long-term impact of a faculty development programme in teaching skills. *Medical Education*, 2007, 41(6) 592–600.

MacDougall J and Drummond M. The development of medical teachers: an enquiry into the learning histories of 10 experienced medical teachers. *Medical Education*, 2005, 39:1213–1220.

Mazotti L et al. Advancing geriatrics education: An efficient faculty development program for academic hospitalists increases geriatric teaching. *Journal of Hospital Medicine*, 2010, 5(9):541–546.

Rosenbaum ME et al. Outcomes of a teaching scholars program to promote leadership in faculty development. *Teaching and Learning in Medicine*, 2005, 17(3):247–253.

Ross PT et al. Using film in multicultural and social justice faculty development: Scenes from Crash." *Journal of Continuing Education in the Health Professions*, 2011, 31(3):188–195.

Srinivasan M et al. Teaching as a competency: Competencies for medical educators. *Academic Medicine*, 2011, 86(10):1211–1220.

Steinert Y et al. Faculty development as an instrument of change: A case study on teaching professionalism. *Academic Medicine*, 2007, 82(11):1057–1064.

Steinert Y and McLeod PJ. From novice to informed educator: The Teaching Scholars Program for Educators in the Health Sciences. *Academic Medicine*, 2006, 81(11):969–974.

Thorndyke LE et al. Functional mentoring: A practical approach with multilevel outcomes. *Journal of Continuing Education in the Health Professions*, 2008, 28(3):157–164.

Windish DM et al. A ten-month program in curriculum development for medical educators: 16 Years of experience. *Journal of General Internal Medicine*, 2007, 22(5):655–661.

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