



21 Faculty Development for Postgraduate Education – The Road Ahead

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Executive Summary

This discussion paper is based on a review of the 23 research papers commissioned by the Future of Medical Education Postgraduate (FMEC PG) Project Environmental Scan, the FMEC PG Liaison and Engagement Consultant Report, the FMEC PG Environmental Scan Interim Synthesis Report, and a comprehensive search of the faculty development literature. Faculty development, which can play a critical role in the development of teaching and learning, promotion of change and innovation, and enhancement of organizational capacities, is essential in ensuring the objectives of the FMEC PG project. The goal of this discussion paper is to highlight issues that are particularly relevant to faculty development in the postgraduate context. For faculty development to be effective, it should address both individual and organizational needs and be integrated into the local context. It should also be grounded in a theoretical framework and build on best practices in the field.

Three major issues were identified in this review:

1. Postgraduate medical education (PGME) is a unique educational environment, with its emphasis on work-based learning, clinical supervision as a predominant method of training, performance-based assessment, and the challenge of simultaneously delivering education, training and service. These aspects should be considered in the design and delivery of all faculty development initiatives.
2. Faculty development for PGME should address both individual and organizational needs. At the individual level, content areas include: leadership development; principles of teaching and learning (e.g., competency-based education; work-based learning; apprenticeship as a model for teaching and learning); the teaching of specific core content such as CanMEDS competencies (e.g., health advocacy and professionalism), other emerging priorities (e.g., social responsibility; socio-cultural diversity and cultural humility; patient safety), and the development of professional identity; methods of teaching and learning; assessment and evaluation; curriculum design and implementation; and knowledge discovery and translation. At the organizational level, faculty development initiatives should help to: reward and recognize clinical teachers and program directors; encourage mentorship and coaching for all teachers; value and promote educational scholarship in PGME (including the scholarship of teaching); and recognize teaching excellence and educational scholarship in promotion criteria. In multiple ways, we need to prepare clinical teachers and program directors to respond to the complexity and shifting priorities of health care and PGME systems, and in so doing, develop educational leaders who will identify opportunities for change, respond effectively to emerging needs, and be prepared to take action.
3. Suggested formats for faculty development in the PGME context include learning from experience (with an emphasis on observation and reflection), learning from peers and residents, learning from formal (structured) activities (e.g., workshops and longitudinal programs), learning from mentors, and learning through work-based experiences and communities of practice. Recent studies have suggested that faculty development can play an important role in creating communities of practice and that communities of practice can help to develop faculty members. Work-based learning and the establishment of communities of practice are important notions in the delivery and enhancement of postgraduate medical education. They are equally important in the development and renewal of clinical teachers and program directors as they strive to address societal needs and promote excellence in the training of future physicians.

INTRODUCTION

The goal of the Future of Medical Education in Canada Postgraduate (FMEC PG) project is to conduct a thorough review of postgraduate medical education (PGME) in Canada and to determine whether the structure, content and processes of the current system are designed to achieve the best possible outcomes to meet current and future societal needs. Faculty development is central to ensuring this objective. The goal of this discussion paper is to review the 23 research papers commissioned by the FMEC PG Environmental Scan Consultant and build on the Best Evidence in Medical Education (BEME) review of faculty development¹ to highlight issues that are particularly relevant to faculty development in the postgraduate context.

This discussion paper will briefly outline definitions of faculty development and review the pertinent faculty development literature, including what is available on faculty development in the postgraduate context. It will also describe a theoretical framework that can guide the design and delivery of faculty development for PGME as well as suggested content and formats for faculty development in the postgraduate context.

METHODOLOGY

To prepare this discussion paper, all 23 FMEC PG papers were reviewed; a comprehensive search of the faculty development literature was conducted; the *FMEC PG Liaison and Engagement Consultant Report (the LEC Report)*² and the *FMEC PG Environmental Scan Interim Synthesis Report (the ES Interim Synthesis Report)*³ were reviewed; and feedback from the FMEC PG Environmental Scan Scientific Advisory Committee was sought. An open discussion with members of the McGill Centre for Medical Education was also held to obtain the views and suggestions of key stakeholders involved in postgraduate education.

DEFINITIONS OF FACULTY DEVELOPMENT

Faculty development, an increasingly important component of medical education,⁴ is critical in moving PGME forward. For the purpose of this discussion, faculty development will refer to that broad range of activities that institutions use to renew or assist faculty in their multiple roles.⁵ That is, faculty development will be viewed as a planned program designed to prepare *institutions* and faculty members for their various roles⁶ and to improve an individual's knowledge and skills in the areas of teaching, research and administration.⁷ In multiple ways, the goal of faculty development is to teach faculty members the skills relevant to their institutional and faculty position, and to sustain their vitality, both now and in the future.⁴

Faculty development can provide medical educators with knowledge and skills about teaching and learning, curriculum design and delivery, learner assessment and program evaluation, leadership and administration, as well as research and scholarship. It can also reinforce or alter attitudes or beliefs about education and scholarly activity, provide a conceptual framework for what is often performed on an intuitive basis, and introduce clinicians to a community of medical educators interested in medical education and the enhancement of teaching and learning for students, patients and peers.⁸

At the same time, faculty development can serve as a useful instrument in the promotion of organizational change.^{9,10} That is, faculty development can help to build consensus, generate support and enthusiasm, and implement a change initiative. It can also help to change the culture within the institution by altering the formal, informal, and hidden curriculum^{11,12} and by enhancing organizational capacities.¹³ As Swanwick¹⁴ has said, faculty development should be:

An institution-wide pursuit with the intent of professionalizing the educational activities of teachers, enhancing educational infrastructure, and building educational capacity for the future...

A recent survey of faculty members' needs for faculty development¹⁵ highlighted the necessity to look at faculty development as "development, orientation and/or support". Interestingly, most programs focus on *development*. Much less has been written about faculty orientation or support. Support for medical educators can take on different forms, ranging from the timely provision of educational information (in print or on line) to the recognition of teaching excellence, consideration of educational scholarship in promotion and tenure, and/or managerial and organizational support. Organizational support can include the development of institutional policies that support and reward excellence in teaching;¹⁶ a re-examination of the criteria for academic promotion, including increased credit for educational initiatives;¹⁷ an increase in training and mentorship programs; and enhanced resources for training junior faculty members. As medical educators we often tend to focus on the individual teacher and overlook the importance of organizational support and development.¹⁰ Clearly, both foci are important in the postgraduate context.

A BRIEF REVIEW OF THE FACULTY DEVELOPMENT LITERATURE

To date, the majority of faculty development programs have focused on teaching improvement. That is, they aim to improve teachers' skills in clinical teaching, small group facilitation, feedback and evaluation.¹ A number of programs also target specific core competencies (e.g., the teaching and evaluation of communication skills; professionalism) and the use of technology in teaching and learning. Less attention has been paid to the personal development of health care professionals, educational leadership and scholarship, and organizational development and change. Although instructional effectiveness at the individual level is critically important, a more comprehensive approach is needed.¹⁸ In fact, we need to develop individuals who will be able to provide leadership to educational programs, act as educational mentors, and design and deliver innovative educational programs.⁴ As Cusimano and David¹⁹ pointed out, there is an enormous need for more health care professionals trained in methods of educating others so that medical education will continue to be responsive to driving forces of change. Faculty development also has an important role to play in promoting teaching as a scholarly activity and in creating an educational climate that encourages and rewards educational leadership, innovation and excellence.

Research on the impact of faculty development activities has shown that overall satisfaction with programs is high and that participants recommend these activities to their colleagues. Teachers report a positive change in attitudes towards teaching as well as self-reported changes in knowledge about educational principles and specific teaching behaviors.¹ Other benefits include increased personal interest and enthusiasm, improved self-confidence, a greater sense of belonging to a community, and educational leadership and innovation. In our own setting at McGill University, participants in faculty development activities have commented on the value of meeting like-minded colleagues and feeling a renewed sense of commitment and enthusiasm about teaching.⁴

In 2006, as part of the Best Evidence in Medical Education (BEME) collaboration, an international group of medical educators systematically reviewed the faculty development literature to ascertain the impact of faculty development initiatives on teaching effectiveness in medical education.¹ The results of this review indicated that the majority of the interventions

targeted practicing clinicians and included workshops, seminar series, short courses, longitudinal programs, and other interventions such as peer coaching, augmented feedback, and site visits. The study designs of the 53 reviewed articles included six randomized controlled trials and 47 quasi-experimental studies, of which 31 used a pretest-posttest design. **Table 1** summarizes the findings of this review, which included high satisfaction with faculty development programs, changes in attitudes towards teaching and faculty development, gains in knowledge and skills, and limited changes in organizational practice and student learning.

Table 1: Summary of BEME Findings on Faculty Development to Improve Teaching Effectiveness¹

High satisfaction with faculty development programs – Participants’ overall satisfaction with faculty development programs was high. Moreover, they consistently found programs to be acceptable, useful and relevant to their objectives. They also valued the methods used, especially those with a practical and skills-based focus.

Changes in attitudes towards teaching and faculty development – Participants reported positive changes in attitudes toward faculty development and teaching as a result of their involvement in these activities. They cited a greater awareness of personal strengths and limitations, increased motivation and enthusiasm for teaching and learning, and a notable appreciation of the benefits of professional development.

Gains in knowledge and skills – Participants reported increased knowledge of educational principles and strategies as well as gains in teaching skills. Where formal tests of knowledge were used, significant gains were shown.

Changes in teaching behaviour – Self-perceived changes in teaching behaviours were consistently reported. While student evaluations did not always reflect participants’ perceptions, observed changes in teaching performance were detected.

Changes in organizational practice and student learning – Although changes in organizational practice and student learning were not frequently investigated, changes did include greater educational involvement and establishment of collegial networks.

The BEME review also identified a number of “key features” (summarized in **Table 2**) as contributing to the effectiveness of faculty development activities.

Table 2: Summary of BEME Findings on “Key Features” of Effective Faculty Development¹

The role of experiential learning – This includes the importance of applying what had been learned, practicing skills and receiving feedback on these skills.

The provision of feedback – The role of feedback in promoting change is important, as is the use of feedback as a specific intervention strategy.

Effective peer and colleague relationships – This includes the value of peers as role models, the mutual exchange of information and ideas, and the importance of collegial support to promote and retain change.

Well-designed interventions following principles of teaching and learning – Adherence to principles of instructional design and principles of adult learning promote effective learning and skill acquisition.

The use of multiple instructional methods to achieve intended objectives – This includes a diversity of educational methods within single interventions to accommodate different learning styles and preferences.

Remarkably little has been written about faculty development in the context of postgraduate education, with several notable exceptions. Swanwick,¹⁴ who noted that faculty development in PGME is founded on the belief that well-trained doctors will provide better patient care, highlighted three main drivers for faculty development in this area: the professionalization of medical education; increasing accountability; and the pursuit of excellence. He also identified key features of PGME that include the following: work-based learning; the central role of clinical supervision; performance assessment in clinical settings; patient safety; and the challenge of simultaneously delivering education, training and service. These aspects should be considered in the design and delivery of all faculty development initiatives in PGME.

Swanwick and colleagues²⁰ further described a *Professional Development Framework* that includes key areas of activity for clinical supervisors: ensuring safe and effective patient care; establishing and maintaining an environment for learning; teaching and facilitating learning; enhancing learning through assessment; supporting and monitoring educational progress; guiding personal and professional development; and continuing professional development as an educator. This framework allows for local flexibility and applicability across specialties and can serve as the foundation of faculty development for clinical supervision. Swanwick and colleagues also underscore the importance of addressing issues of faculty motivation, recognition and reward¹⁴ as well as the need for institutional leadership and support.²⁰

A similar message is conveyed by Dath and colleagues²¹ as they highlight the importance of faculty development in the transition to competency-based medical education (CBME). As these authors state:

Faculty development can provide knowledge about CBME, training in new teaching techniques in different domains of medical practice, and new strategies for providing authentic and regular assessment that is an essential aspect of CBME.

A THEORETICAL FRAMEWORK FOR FACULTY DEVELOPMENT IN THE PGME CONTEXT

MacDougall and Drummond²² have pointed out that there is no clear theoretical framework to describe how medical teachers and educators develop. In fact, despite an emphasis on educational “know how” and practice, theory is noticeably absent from the faculty development literature. However, a number of educational theories could be applied to faculty development and the development of medical educators, including constructivism,²³ social learning²⁴ and self-efficacy.²⁵ However, situated learning²⁶ appears to be the most useful overarching framework for faculty development in PGME, as it applies to both teaching and learning in the postgraduate context. Principles of adult learning²⁷ and experiential learning²⁸ are also pertinent, especially in the design and delivery of instructional programs.

Situated learning is based upon the notion that knowledge is contextually situated and fundamentally influenced by the activity, context, and culture in which it is used.²⁶ In many ways, this view of knowledge, as situated in authentic contexts, provides a useful framework by which to understand both PGME and the development of clinical teachers and program directors.

Situated learning theory brings together the cognitive base and experiential learning that is needed to facilitate the acquisition of new behaviours. That is, it bridges the gap between the “know what” and the “know how” of teaching and learning by embedding learning in authentic activities. It also helps to transform knowledge from the abstract and theoretical to the useable and useful.²⁹ The proponents of situated learning suggest that there should be a balance between the explicit teaching of a subject and the activities in which the knowledge learned is used in an authentic context. Both are essential principles in faculty development for PGME.

Some of the key components of situated learning (summarized in **Table 3**, Appendix 3) include: cognitive apprenticeship; collaborative learning; reflection; practice; and articulation of learning skills.³⁰

Closely tied to the notion of situated learning is the concept of “legitimate peripheral participation”.³¹ This social practice, which combines “learning by doing” (also known as experiential learning) and apprenticeship into a single theoretical perspective, is the process by which a novice becomes an expert. That is, from a situated learning perspective, learners build new knowledge and understanding through gradual participation in the community of which they are becoming a part. As learners, they begin at the edge – or periphery – of the community, where, because of their status as learners, they have what is called “legitimate peripheral participation”.³² Mann³³ provides a useful example. As residents at the beginning of their training gain experiences, they slowly become involved in a community of physicians. They gradually participate in more of the community’s work, and they move from the periphery towards the centre. They also take on increasing responsibility for the work of the community, namely the care of patients. In the process, they learn to “talk the talk” and “walk the walk”. In many ways, teachers go through a similar process. A key element of participation in the community is the opportunity to see, and participate in, the framing of problems and understand how knowledge is structured. According to Wenger,³⁴ social participation within the community is the key to informal learning. It is embedded in the practices and relationships of the workplace and helps to create identity and meaning. This is particularly true for clinical teachers. Social participation within the community also complements, and can substitute for, formal learning mechanisms. Informal learning is often not acknowledged as learning within organizations; rather, it is typically regarded as being “part of the job”. However, “learning at work” is a key component of the development of clinical teachers and program directors, and there is value in rendering this learning as visible (or explicit) as possible so that it can be valued as an important component of

faculty development. Of equal importance, this type of learning mirrors that of postgraduate trainees.

SUGGESTED CONTENT FOR FACULTY DEVELOPMENT IN THE PGME CONTEXT

As stated earlier, faculty development should address both individual and organizational needs. Faculty development also needs to be integrated into the local context and address the needs of both clinical teachers and program directors. At times, these needs may be the same; at other times, specific activities should be designed for program directors, especially as they are responsible for curriculum design and implementation and may opt to design site-specific activities for their clinical teachers. It is also important to point out that the notion of faculty development is not restricted to teachers in an academic setting; in fact, “faculty” refers to all teachers involved in the training of residents, in academic, hospital and community-based settings. We should also remember that residents function as teachers (e.g., of medical students). Commissioned paper 24: Supporting the Development of Residents as Teachers addresses the importance of teaching residents to teach; it is never too early to include residents in appropriate faculty development activities. At McGill University, residents have appreciated the opportunity to work together with their teachers to improve their educational skills; they have also commented on the benefit of witnessing their teachers’ commitment to self-improvement and life-long learning.

A. FACULTY DEVELOPMENT DESIGNED TO ADDRESS INDIVIDUAL NEEDS

Table 4 summarizes the key content areas for faculty development designed to address individual needs. Some of these areas are described in further detail below.

Table 4: Suggested Content for Faculty Development Designed to Address Individual Needs

<p>A. Leadership Development</p> <p>B. Teaching and Learning</p> <p>i. General Principles and Frameworks</p> <ul style="list-style-type: none">▪ Competency-based education▪ Work-based learning▪ Situated learning▪ Apprenticeship as a model for teaching and learning▪ Principles of adult learning▪ Student-centred learning▪ Life-long learning <p>ii. Specific Core Content Areas</p> <ul style="list-style-type: none">▪ Teaching CanMEDS competencies e.g., Health advocacy Professionalism▪ Teaching other emerging priorities e.g., Social responsibility Socio-cultural diversity and cultural humility Patient safety▪ Promoting integrated and interprofessional care▪ Addressing the hidden curriculum▪ Facilitating identity formation▪ Promoting resident well-being and physician health▪ Teaching international medical graduates <p>iii. Methods of Teaching and Learning</p> <ul style="list-style-type: none">▪ Role modelling▪ Mentoring and coaching▪ Experiential learning and reflective practice▪ Teaching in the workplace▪ Using educational technologies (e.g., online learning; simulation)▪ Teaching at a distance <p>C. Assessment and Evaluation</p> <p>D. Curriculum Design and Implementation</p> <p>E. Knowledge Discovery and Translation</p>

Leadership Development

Given the need for curricular change at multiple levels, a focus on leadership should be a key component of any faculty development initiative. Although little has been written about the role of educational leaders in the PGME context, an interesting study by Bordage and colleagues,³⁵ who surveyed Deans and Associate Deans to identify the educational and leadership skills required of “program directors with major educational and leadership responsibilities,” indicated the importance of nine key skill areas: oral communication; interpersonal abilities; clinical competence; educational goal-definition; educational design; problem-solving and decision-making; team building; written communication; budgeting and financial management. Spencer and Jordan³⁶ also highlighted the fact that educational change requires leadership and that we need to equip our colleagues to implement change. Possible topic areas could include personal and interpersonal effectiveness; leadership and change management; conflict management and negotiation strategies; team building and effective meetings; and organizational change and development.³⁷

The need for leadership development has also been highlighted by the *LEC Report*,² as a number of stakeholders expressed the view that:

The medical profession, starting with PGME, needs to demonstrate leadership in recognizing the profession's responsibilities for meeting society's needs, including meaningful participation in health human resource planning and processes for ensuring that the PGME system nationally produces the mix and distribution of physicians that are needed in Canada now and in the future.

Leadership training would also help to prepare clinical teachers and program directors respond to the complexity and shifting priorities of health care and PGME systems. In multiple ways, we need to develop leaders who will identify opportunities for change, respond effectively to emerging needs, and be prepared to take action.

Teaching and Learning

The broad area of teaching and learning can be divided into three main areas, as summarized in **Table 4**: general principles and frameworks; specific core content areas; and methods of teaching and learning.

General principles and frameworks include: competency-based education; work-based learning; situated learning; apprenticeship as a model for teaching and learning; principles of adult learning; and student-centered and life-long learning. Clearly, this discussion paper cannot outline the content of a faculty development activity for each of these areas; however, it is essential that clinical teachers and program directors understand the key concepts underlying each of the above notions and that they have an opportunity to reflect upon their application in residency education.

Based on the 23 commissioned research papers, a number of **specific core content areas** must also be addressed. For example, it is apparent that PGME teachers and educators will need to be able to: teach all of the CanMEDS competencies (e.g., health advocacy; professionalism) as well as other key content areas that emerged as priorities in the environmental scan (e.g., social responsibility; socio-cultural diversity and cultural humility; patient safety); promote integrated and interprofessional care; address the hidden curriculum and facilitate identity formation; promote resident well-being and physician health; and teach

international medical graduates in an effective manner. Each of these topics could be a chapter in itself (e.g., resident well-being and physician health). However, using the teaching of professionalism as an example,^{10,38} faculty development in this area will need to focus on core content, attitudinal change and skill acquisition, as well as organizational support and development. Moreover, as commissioned paper 20: Teaching, Learning and Assessing Professionalism observed:

Faculty development is a powerful tool to get faculty 'buy in', to promote the understanding and vocabulary which is the basis of any program, to develop trained teachers... and to effect changes in postgraduate training programs. It is difficult to envisage major changes without a flourishing faculty development program.

Many of the commissioned papers addressed aspects of CanMEDS roles and competencies. As commissioned paper 15: Integration of CanMEDS Expectations and Outcomes has noted, there is a need to bridge the gap between best practices (and what the literature tells us) and teaching these competencies in the clinical and classroom setting, with a particular focus on non-medical expert roles. Clinical teachers must also be adept at identifying teachable moments when teaching in the clinical milieu and faculty development has a significant role to play in achieving this objective. The *LEC Report*² highlighted that although it is broadly recognized that CanMEDS is an excellent framework to describe the roles and competencies of contemporary physicians, "there are limitations to the teaching and evaluation of these roles within PGME." This observation indicates a clear need for faculty development programming across the country, especially as a number of educators reported that they did not have the skills or tools to evaluate non-medical expert competencies. Others have commented that the definition of certain competencies still needs to be adapted to specialty-specific contexts, and both local and national faculty development activities can help to move this objective forward. Moreover, although the Royal College of Physicians and Surgeons of Canada (RCPSC) has developed a series of train-the-trainer sessions and core teaching materials for teaching the CanMEDS competencies, it is imperative that these be disseminated locally, for as Frank and Snell³⁹ stated:

Without addressing the challenges to full implementation at the level of the teacher and learner, the promise of CBME will be difficult to realize.

The notion of social responsibility and training physicians to meet the health care needs of society emerged as a priority in the commissioned papers. We need to ensure that our teachers and educational leaders understand this complex issue and remain poised to meet this challenge.

The commissioned papers also underscored the fact that enculturation and the development of a professional identity is distinct from the needed training of core competencies. In fact, identity formation is a complex process that evolves over time. The intersection of identity formation and socialization needs to be understood more clearly, and this topic, in itself, could form the foundation of a comprehensive faculty development program.

Methods of teaching and learning will also need to be addressed. In addition to the usual repertoire of teaching methods commonly highlighted by faculty development programs (e.g., small group teaching, effective feedback), the following pedagogical methods will need to be emphasized: role modelling; mentorship and coaching; experiential learning and the promotion of reflective practice; work-based learning; educational technologies (e.g., online learning and simulation); and teaching at a distance.

Role modelling is one of the most commonly used – and powerful – methods of teaching and learning. However, teachers usually take this important strategy for granted and rarely take the time to make the implicit explicit. Faculty development in this area could help teachers to become aware of the importance of role modelling, dissect the components of this important teaching and learning strategy, analyze facilitators and barriers to effectiveness, examine how the institutional culture can help to promote role modelling, and help to make the implicit explicit.⁴⁰ Content areas such as resident wellness and work-life balance, as well as interprofessional practice, are also key areas to discuss from the optic of role modelling as many clinical teachers may not be modelling what we want residents to be learning.

Although mentorship is a critical component of teaching and learning in PGME, clinicians rarely receive training in this area, and, as a result, may be ill-equipped to take on significant mentoring relationships.^{41,42} Faculty development on mentoring could focus on the role and value of mentoring in career development; the skills and strategies needed to promote mentorship; and the variables that affect this important relationship (e.g., culture; gender; discipline). Daloz's model,⁴³ with its emphasis on "support, challenge, and a vision of the individual's future career," could be a helpful framework for promoting mentorship. Coaching is closely related to mentorship but does not pre-suppose an ongoing relationship; it may also be more limited to the acquisition of specific knowledge or skills.

As commissioned paper 20: Teaching, Learning and Assessing Professionalism suggested, the development of a professional identity depends heavily upon experiential learning and reflective practice. For this and multiple other reasons, we must prepare our teachers to be able to maximize the benefits of experiential learning and promote reflection in a busy work environment. According to Kolb and Fry,²⁸ who have provided a description of the learning cycle that highlights the role of experience in the learning process, learners need opportunities to experience each step of the learning cycle. That is, they need the ability to experience diverse situations (in both the classroom and the clinical setting); observe and reflect on what they have learned (often in a large group session); develop their own theory and understanding of the world; and experiment with new ways of being in order for learning to occur. Attention to the experiential learning cycle facilitates teaching *and* learning and helps to ensure that different learning styles are respected and nurtured. Learning to promote reflective practice could include an understanding of what we mean by reflection, finding ways to trigger self-assessment and critical analysis, and helping to make an implicit process more explicit.

Work-based learning has been defined as learning *for* work, learning *at* work, and learning *from* work.¹⁴ It is closely tied to the notion of experiential learning, as learning on the job is often the first entry into professional practice. In fact, it is in the everyday workplace, where residents interact with faculty, colleagues and other members of the health care team, that learning most often takes place. It is, therefore, very important for teachers to view everyday experiences as learning experiences, to reflect with residents on learning that has occurred in the work environment,⁴⁴ and to make the invisible more visible.

Educational technologies have been described in detail in two of the commissioned papers. As commissioned paper 14: Information and Educational Technology suggests, our teachers need to be prepared so that they are "comfortable and proficient with information technology and educational technologies in PGME." Commissioned paper 18: Simulation in PGME highlights the need for faculty development to ensure that teachers are able to articulate the theoretical underpinnings of simulation, distinguish between the different approaches that can be used (e.g., part-task trainers; manikin-based simulations), and integrate simulation methodologies

across disciplines, institutions and training levels. The *LEC Report*² also suggested that educators and residents need to value the increased use of simulation in PGME, to enable additional training (especially in areas that are not easily available in the work environment), to promote patient safety, and to facilitate inter-professional care. Teaching in a simulation-based environment requires skill and pedagogical expertise, and teachers and educators need to be prepared to use these educational technologies efficiently and effectively.

The adoption of distance-based PGME in Canada, which further necessitates the use of online technologies, also suggests a new focus for faculty development.

Assessment and Evaluation

Commissioned paper 13: Assessment in PGME: Trends and Issues in Assessment in the Workplace, which includes a comprehensive literature review and analytic exploration of competency-based assessment, suggests that assessment must lead to an integrated concept of practice. It also suggests that teachers must be able to identify, document, communicate and remediate underperformance, that the system must address the organizational, administrative and cognitive barriers that impede effective assessment, and that residents must be actively engaged in the process. Clearly, these are all issues for faculty development, as is the need to move beyond a perceived reliance on in-training evaluations and develop novel methods of competency-based assessment.

Issues related to assessment were also identified in the *LEC Report*.² Many stakeholders, including both residents and educators, identified the challenge of assessing CanMEDS competencies and requested more frequent (or ongoing) evaluation, with less emphasis on final examinations. The *ES Interim Synthesis Report*³ noted that although we have access to diverse tools to assess competencies, lingering questions about their utility and relevance remain. A perceived gap in the development of self-assessment skills for residents was also noted, as was the challenge of assessment in what some have called a litigious environment (which makes teachers reluctant to be truthful in their evaluations). Clearly, each of these areas should be addressed in a comprehensive manner.⁴⁵ The *ES Interim Synthesis Report*³ also observed that “PGME has not yet found ways to support faculty in providing meaningful feedback to residents” and that “problem” residents remain a challenge for teachers and administrators alike. Faculty development activities should address these educational imperatives while promoting the value of authentic assessment in the workplace. Interestingly, the assessment of residents, with a focus on formative and summative evaluation, was also highlighted as a key priority by members of the McGill Centre for Medical Education.

Curriculum Design and Implementation

The *LEC Report*² and the *ES Interim Synthesis Report*³ both identified an “emerging disconnect between the content and design of PGME in Canada and the outcomes we expect”. Clearly this observation necessitates a focus on curriculum design and implementation. It has also been noted that the majority of program directors, who are responsible for the vision and delivery of educational programs, are often ill-prepared for the task at hand. As a result, we must help them to become agents of educational change,⁴⁶ prepared to lead curricular innovation and renewal in their own specialties and units.

Faculty development focusing on curriculum design and implementation should highlight the instructional design cycle, which includes a description of learning outcomes, the matching of objectives to educational content and pedagogical methods, the assessment of learners, and

the evaluation of educational programs. Enhancing teachers' abilities to perform literature reviews and environmental scans would also be helpful, as would an understanding of stakeholder engagement, theories of innovation, and principles of program evaluation. A focus on specific curricular content would be additionally beneficial and could include: length of training; streaming; issues related to *time-based* versus *competency-based* education; respect for duty hours; promoting a safe and respectful learning environment; patient safety; and interprofessional education and practice.

The notion of sharing "best practices" among all Canadian universities emerged as an important dimension of curriculum design. As stakeholders in the *LEC Report*² stated:

Each program at each university currently has to develop and deliver a curriculum for CanMEDS competencies.... These modules could be shared across programs to reduce the need for each program to develop and implement them independently. Where content needs to be tailored to a specific specialty, the sharing could be between programs across universities.

Finally, with the increase in distributed PGME, educators will need to be cognizant of models of distributed education, the principles and strategies of effective distance-based learning, and strategies to overcome common challenges.

Knowledge Discovery and Translation

Although research and scholarship were not highlighted in the 23 commissioned papers, knowledge discovery and translation remain key areas for residency education. They are also priorities for faculty development as our clinical teachers and program directors need to promote scholarship, in its broadest sense, among all learners. A faculty development program focusing on knowledge discovery and translation could include: definitions of scholarship; an overview of quantitative and qualitative research methods; information management and critical appraisal; and methods of knowledge transfer.

B. FACULTY DEVELOPMENT DESIGNED TO ADDRESS ORGANIZATIONAL NEEDS

As stated earlier, faculty development can serve as a useful instrument in the promotion of organizational change. That is, faculty development can help to build consensus, generate enthusiasm, and support curricular change. Faculty development can also help to change the culture within the institution by addressing the formal, informal, and hidden curriculum,^{11,12} and by enhancing organizational capacities.¹³

In addition, faculty development initiatives should help to: facilitate the formative and summative evaluation of clinical teachers; reward and recognize effective clinical teachers and program directors; develop remediation programs for clinical teachers who need to improve their professional and teaching behaviours; encourage mentorship and coaching for all teachers; value and promote educational scholarship in PGME (including the scholarship of teaching); and recognize teaching excellence and educational scholarship in promotion criteria.

As voiced in the *LEC Report*,² changes in health care and PGME have, in many ways, increased the expectations of clinical teachers. We must, therefore, find ways to ensure that our expectations are realistic and that the rewards are appropriate and sufficient. The *LEC Report*² also remarked upon the volunteerism of clinical teachers across academic and distributed sites as strengths of PGME. We need to ensure that this spirit of volunteerism is not abused and that it can be sustained.

Faculty development offices should work in tandem with other educational units to help clarify expectations of clinical teachers, protect time for teaching, and provide appropriate support for innovation and excellence. The latter might take the form of managerial or administrative support, timely provision of information (e.g., online educational resources), or new professional development opportunities. The *ES Interim Synthesis Report*³ highlighted the numerous environmental and systemic pressures that PGME teachers and educators face, including the educational competencies expected of clinical teachers, the competing priorities inherent to clinical and academic settings, and the challenge of teaching effectively in a fast-paced environment. The report also states that:

The overall result of these various pressures is a large group of poorly equipped clinical teachers who are expected to perform an increasingly complicated and complex task.

Clearly, this is a call for faculty development to be involved in promoting change at an organizational level.

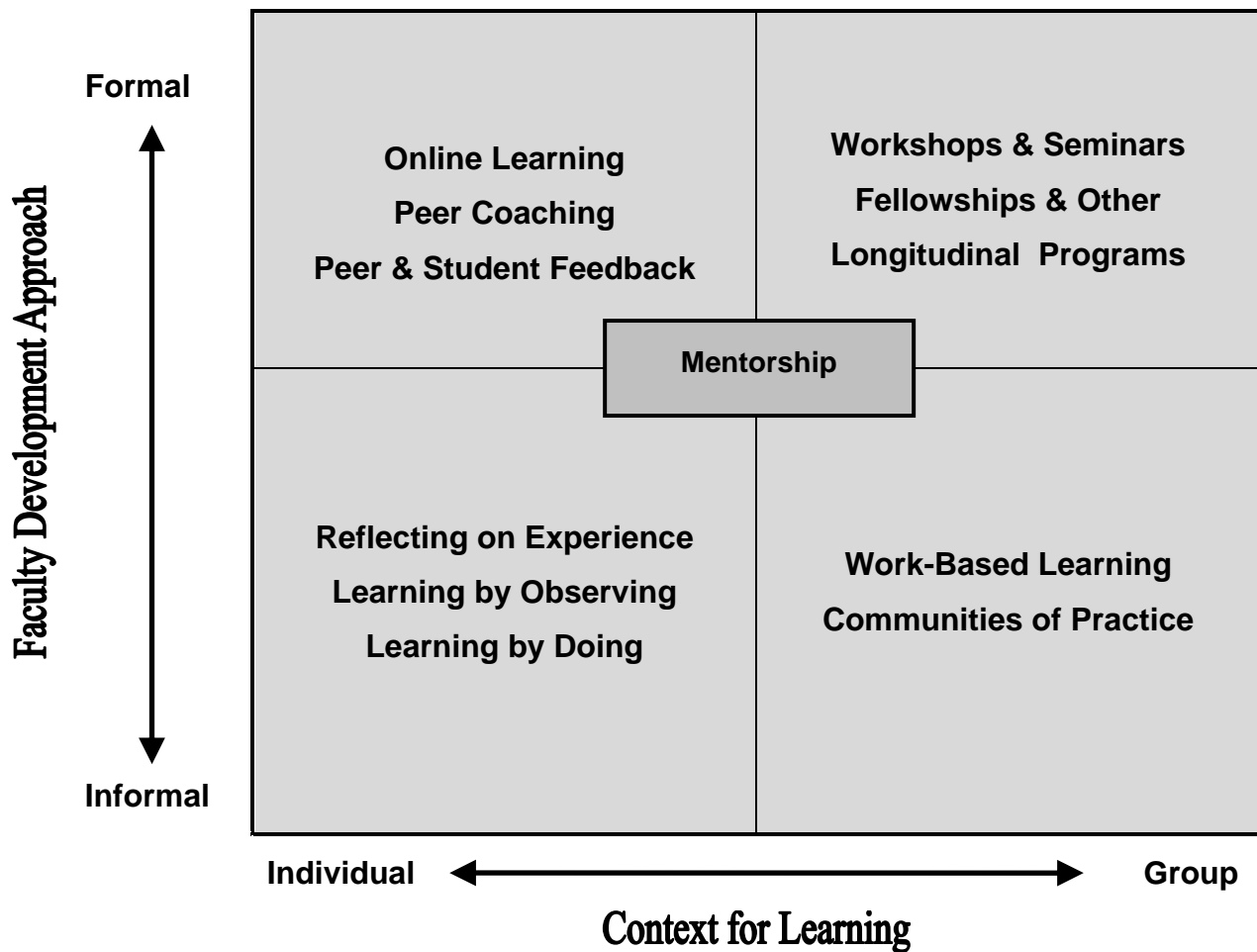
SUGGESTED FORMATS FOR FACULTY DEVELOPMENT IN THE PGME CONTEXT

Table 2 summarizes the “key features” of effective faculty development activities.¹ As in every other context, they should also be incorporated into faculty development for postgraduate teachers and program directors.

In addition to these key features, faculty development in the PGME context needs to be cognizant of the multiple roles that teachers play in the clinical context, the primacy of attending to the needs of patients and their families, the juggling of roles that teachers experience as they try to attend to patients’ and residents’ needs, and the balance between service and education. In multiple ways, faculty development initiatives should strive to build on teachers’ strengths and potential for learning, modelling what occurs in the clinical learning environment.

We should also remember how teachers learn and the variety of formats available for faculty development. As recently described⁴⁷ and illustrated in **Figure 1**, faculty development activities can move along two dimensions: from individual (independent) experiences to group (collective) learning, and from informal approaches to more formal ones. This section briefly outlines suggested formats for faculty development in the PGME context by examining what takes place in each quadrant. Mentorship has been placed in the center of the figure, as any strategy for self-improvement can benefit from the support and challenge that an effective mentor can provide.

Figure 1: Faculty Development – From Workshops to Communities of Practice^{47,48}



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Learning from Experience

It has been said that medical educators become adept at what they do by “the nature of their job responsibilities” and “learning on the spot”.⁴⁹ Although this form of learning is not often considered an approach to faculty development, it is vital to self-improvement. It can also be divided into three specific categories: learning by doing; learning by observing (and through role modelling); and learning by reflecting on experience.⁴⁸ Fundamental notions of reflection are described in **Table 3** (in Appendix 3). It is important to remember that reflecting on experience enhances both learning by doing and observing, and it is a critical component of successful faculty development. In fact, whatever the nomenclature, self-awareness, critical analysis and the development of a new perspective are fundamental to the process of self-improvement and must be viewed as part of the trajectory of professional development.

Learning from Peers and Residents

Peer coaching, sometimes called co-teaching, has particular appeal for clinical teachers because it occurs in the practice setting, enables individualized learning, and fosters collaboration.¹⁸ It also models aspects of clinical practice: the identification of individual learning goals (e.g., improving specific teaching skills); focused observation of teaching by colleagues; and the provision of feedback, analysis and support.⁵⁰ As a result, we should consider ways of enhancing this faculty development strategy, especially as it allows clinical teachers to learn about each other as they teach together.⁵¹ Interestingly, the majority of teachers are reluctant to seek feedback from their peers. Why is this? What can we do to help teachers see the benefits of asking a colleague to observe them and to provide feedback after a specific teaching encounter? Soliciting feedback from students and residents can be equally worthwhile. In fact, the following questions can trigger a useful discussion after a specific teaching encounter: What did you learn today? What about this encounter was helpful to you? What could we have done differently to make it more useful to you? It is unfortunate that feedback of this nature is not routine,⁴⁸ especially as an appreciative inquiry of student or resident evaluations can be a valuable strategy for the professional development of faculty members.

Learning from Formal (Structured) Activities

Workshops, seminars and structured courses are the most commonly used formats for faculty development.¹ They are popular because of their inherent flexibility and promotion of active learning, and include a variety of teaching methods: interactive lectures, small group discussions and exercises, role-plays and simulations, and experiential learning. They are also commonly used to promote skill acquisition, prepare for new curricula, or help faculty to adapt to new teaching environments.⁴ However, it remains imperative to ensure that these educational activities are relevant to teachers' needs, promote principles of adult learning, and take place in the work environment.

Mentorship

As stated earlier, mentoring is a common strategy that can be used to promote the socialization and development of medical faculty.⁴¹ However, it is an underutilized strategy for professional development and should be considered an explicit approach in faculty development.⁵² Mentors can provide guidance, direction, support or expertise to faculty members in a variety of settings. They can also help teachers to understand the organizational culture in which they work and introduce them to invaluable professional networks.⁵³ Finding a mentor – and being mentored – has been considered one of the most critical aspects of the process of becoming a better teacher.⁴⁹ We should strive to recognize the value of this important activity and help colleagues to identify their needs and actively seek a mentor, knowing that, at times, multiple mentors for diverse purposes are both recommended and beneficial.

Work-based Learning and Communities of Practice

As mentioned previously, it is in the everyday workplace, where teachers conduct their clinical, research and teaching activities – and where they interact with faculty, colleagues and residents – that learning most often takes place. In many ways, it is unfortunate that we do not currently view work-based learning as a venue for faculty development, as by working together in a clinical or classroom setting and discovering opportunities for learning, teachers can acquire new knowledge and develop novel approaches to teaching and learning. It is also interesting to note that faculty development activities have traditionally been conducted away from the

teacher's workplace, requiring participants to take their "lessons learned" back to their own contexts. Perhaps it is time to reverse this tradition and think about how we can enhance the learning that takes place in the work environment. By working together and participating in a larger community, clinical teachers and program directors can build new knowledge and understanding, and develop approaches to educational problems and challenges.³¹

The notion of a "community of practice" is closely tied to that of work-based learning. Barab and colleagues⁵⁴ have defined a community of practice as a "persistent, sustaining, social network of individuals who share and develop an overlapping knowledge base, set of beliefs, values, history and experiences focused on a common practice and/or mutual enterprise". In many ways, becoming a member of a teaching community can be a critical step in becoming a better teacher. More specifically, Lave and Wenger³¹ suggest that the success of a community of practice depends on five factors: the existence and sharing by the community of a common goal; the existence and use of knowledge to achieve that goal; the nature and importance of relationships formed among community members; the relationships between the community and those outside it; and the relationship between the work of the community and the value of the activity. A community also requires a shared repertoire of common resources, including language, stories and practices.³⁴ In diverse ways, belonging to a community of practice builds on the collegiality that we often witness in clinical medicine and can be an important venue for faculty development, which in turn can lead to the development of a community of practice.⁵⁵ As medical educators, we need to help our colleagues *value* the community of which they are a part (e.g., by celebrating its existence, members and resources) and *find* community (e.g., by building new networks, creating opportunities for exchange and support, and sustaining relationships). A colleague has offered the following perspective:⁴⁹

If you are able to immerse yourself in a group, it gives you so much. If you start with some experience, and you mix yourself into a group with like interests, you get much more out of it... It's being able to look at things critically with education glasses on ...the same way you would look at a patient with, you know, diagnosis glasses on, or treatment care glasses on. It's a different approach, a different way of looking at things...

CONCLUSION

The goal of this discussion paper was to highlight issues relevant to faculty development in the PGME context. A number of additional strategies could also be considered as we try to move the faculty development agenda forward at a national level. Whenever possible, we should build onto existing faculty development programs and activities. All 17 Faculties of Medicine in Canada have a faculty development office, division, or centre. Many of the suggestions described in this paper could be considered by these units. At the same time, we should invest in centres for medical education research and scholarship, both to help implement some of these suggestions, and more importantly, to assess the impact and effectiveness of faculty development programs designed to enhance PGME. We should also remember that these centres can potentially offer a community of practice, important for both developing faculty members and initiating new educational programs. In addition, it is worth noting that the Association of Faculties of Medicine's *Faculty Development Program for Teachers of International Medical Graduates*¹⁵ was successful, in part, because of small grants that were offered to the 17 schools to implement new faculty development initiatives. A similar program, to fund innovations in faculty development for PGME, should be considered, as should a subsequent sharing of "best practices". Finally, national train-the-trainer programs also have a role to play in moving the faculty development agenda forward. The Royal College of Physicians and Surgeons of Canada developed such programs for the CanMEDS competencies. It would

now be worthwhile to build on these activities and consider the development of national training programs and educational resources to support local activities.

The root of the word doctor is to teach. However, although the majority of doctors are expert in *what* they teach, most have had little or no training in *how* to teach.⁵⁶ They are also minimally prepared for the many roles that are subsumed under the term medical educator. As Jason and Westberg⁵⁷ observed:

The one task that is distinctively related to being a faculty member is teaching; all other tasks can be pursued in other settings; and yet, paradoxically, the central responsibility of faculty members is typically the one for which they are least prepared.

As the demands for accountability in higher education gain momentum, pressures to change professional conduct in medical education will continue to grow.¹⁶ Moreover, as the emphasis on global standards in medical education increases,⁵⁸ so will the need for the professional development of medical educators. As Glicken and Merenstein¹² have aptly stated, faculty members often come to medical teaching with the “wisdom and experience that dictates what their students need to know” although they have not been trained for the job at hand. Clearly, it is our responsibility to enable this training, either through formal or informal approaches.

PGME is a unique educational environment,¹⁴ with its emphasis on situated, work-place learning and clinical supervision as a predominant method of training. We should be cognizant of these attributes as we design and deliver faculty development for PGME. We should also remember that the ultimate goal of faculty development is to enable clinical teachers and medical educators to contribute to the training of future generations of health care professionals, and as a result, the well-being of patients and families.

THREE KEY MESSAGES

1. Postgraduate medical education (PGME) is a unique educational environment, with its emphasis on work-based learning, clinical supervision as a predominant method of training, performance-based assessment, and the challenge of simultaneously delivering education, training and service. These aspects should be considered in the design and delivery of all faculty development initiatives.
2. Faculty development for PGME should address both individual and organizational needs. At the individual level, content areas include: leadership development; principles of teaching and learning (e.g., competency-based education; work-based learning; apprenticeship as a model for teaching and learning); the teaching of specific core content such as CanMEDS competencies (e.g., health advocacy and professionalism), other emerging priorities (e.g., social responsibility; socio-cultural diversity and cultural humility; patient safety), and the development of professional identity; methods of teaching and learning; assessment and evaluation; curriculum design and implementation; and knowledge discovery and translation. At the organizational level, faculty development initiatives should help to: reward and recognize clinical teachers and program directors; encourage mentorship and coaching for all teachers; value and promote educational scholarship in PGME (including the scholarship of teaching); and recognize teaching excellence and educational scholarship in promotion criteria. In multiple ways, we need to prepare clinical teachers and program directors to respond to the complexity and shifting priorities of health care and PGME systems, and in so doing, develop educational leaders who will identify opportunities for change, respond effectively to emerging needs, and be prepared to take action.
3. Suggested formats for faculty development in the PGME context include learning from experience (with an emphasis on observation and reflection), learning from peers and residents, learning from formal (structured) activities (e.g., workshops and longitudinal programs), learning from mentors, and learning through work-based experiences and communities of practice. Recent studies have suggested that faculty development can play an important role in creating communities of practice and that communities of practice can help to develop faculty members. Work-based learning and the establishment of communities of practice are important notions in the delivery and enhancement of postgraduate medical education. They are equally important in the development and renewal of clinical teachers and program directors as they strive to address societal needs and promote excellence in the training of future physicians.

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Appendix 1: About the Author

Dr. Yvonne Steinert, a clinical psychologist and Professor of Family Medicine, is the Associate Dean for Faculty Development and the Director of the Centre for Medical Education at McGill University. She is actively involved in undergraduate and postgraduate medical education, educational research, and the design and delivery of faculty development programs and activities in a variety of settings. Her research interests focus on teaching and learning in the health care professions, the impact of faculty development on the individual and the organization, and the continuing professional development of faculty members. She has written extensively on the topic of faculty development and frequently addresses medical educators at both national and international meetings. Dr. Steinert is the Past-President of the Canadian Association for Medical Education, the first recipient of the ACMC-AstraZeneca Award for Exemplary Contribution to Faculty Development in Canada, and a recent recipient of the CAME-Ian Hart Award for Distinguished Contribution to Medical Education.

Appendix 2: Annotated Bibliography

Steinert Y, Mann K, Centeno A, Dolmans D, Spencer J, Gelula M, Prideaux D. A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No. 8. *Med Teach* 2006 Oct; 28(6):497-526.

This paper synthesizes the existing evidence that addresses the 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 faculty development literature tends to support the following outcomes: Overall satisfaction with faculty development programs is high. Participants consistently find programs acceptable, useful and relevant to their objectives. Participants report positive changes in attitudes toward faculty development and teaching, increased knowledge of educational principles, gains in teaching skills, and changes in teaching behaviors. Although limited changes in organizational practice and student learning were noted, this paper concludes that faculty development activities appear to be highly valued by participants. The authors also describe program characteristics that are consistently associated with effectiveness, including the role of experiential learning, the provision of feedback, effective peer and colleague relationships, well-designed interventions that incorporate principles of teaching and learning, and the use of multiple instructional methods to achieve intended objectives.

Swanwick T. See one, do one, then what? Faculty development in postgraduate medical education. *Postgrad Med J* 2008; 84:339-43.

Swanwick postulates that there has been a growing interest in the development of medical educators in PGME and that this increased interest is driven by three overlapping trends: the professionalization of medical education; increasing accountability; and the pursuit of educational excellence. In this paper, Swanwick explores the following key features of PGME: work-based learning; the central role of clinical supervision; performance assessment in the clinical setting; patient safety; and the challenge of simultaneously delivering education, training and service. In closing, he highlights the importance of faculty development and how culture change is required to ensure the ongoing improvement of PGME.

Wenger E. *Communities of practice: learning, meaning and identity*. New York: Cambridge University Press; 1998.

Wenger states that “communities of practice are everywhere”. Most of us are familiar with the experience of belonging to a community of practice. In this book, Wenger describes a social theory of learning and explores the different elements of communities of practice, including practice, identity and design. He also describes the link between knowledge management and learning organizations and how the concept of a community of practice underlies innovation and change.

Appendix 3: Key Concepts of Situated Learning

Cognitive apprenticeship is a fundamental element of situated learning. Apprenticeship is a familiar and pervasive method of learning in medicine.³³ Cognitive apprenticeship differs from a more traditional approach in that the process of carrying out the task that is to be learned is not always observable; learning is not always situated in the workplace; and transfer of skills to new situations is required. Thus, in order to translate the model of traditional apprenticeship to cognitive apprenticeship, teachers need to *identify the processes* of the task and make them visible, or explicit, to the learner; *situate* abstract tasks in authentic contexts, so that learners understand the relevance of the work; *vary* the diversity of learning situations; and *articulate* common aspects so that learners can transfer their new knowledge and learning to new situations.³⁰ Cognitive apprenticeship consists of four distinct phases: modeling, scaffolding, fading and coaching.

Collaborative learning is another important feature of situated learning. Brown and colleagues²⁶ identified the following strategies to promote collaborative learning: collective problem-solving; displaying and identifying multiple roles; confronting ineffective strategies and misconceptions; and developing collaborative work skills. Small group work, peer teaching and group projects can also facilitate the acquisition of collaborative skills, all essential components of teamwork.

Reflection, an essential ingredient of situated learning, has received considerable attention in the medical literature. Schön⁵⁹ outlined two kinds of reflective activity: reflection *in* action, which refers to a spontaneous reaction (i.e. ‘thinking on your feet’) and reflection *on* action, which implies thinking of a situation after it has happened, allowing a re-evaluation of the situation. While the development of the capacity to reflect “in” and “on” action has become an important feature of medical practice, “reflection *for* action” forms an additional avenue for professional training and the improvement of practice as it involves planning for the next step.⁶⁰ As Lachman and Pawlina⁶⁰ observed, “the benefits of reflective practice, whilst meeting the objectives of new and revised curricula, extend beyond the construct of a medical curriculum. The process of reflection and its basis of critical thinking allows for the integration of theoretical concepts into practice; increased learning through experience; enhanced critical thinking and judgment in complex situations; and the encouragement of student-centred learning.”

Practice is another central component of situated learning. Repeated practice serves to test, refine, and extend skills into a web of increasing expertise in a social context of collaboration and reflection.³⁰ It also enables skills to become deeply rooted and “automatically” mobilized as needed. The notion of experiential learning is closely tied to the concept of practice.

Articulation includes two aspects.³⁰ First, it refers to the concept of articulating or separating out different component skills in order to learn them more effectively. An example of this is effective communication with peers. Second, articulation refers to the goal of getting individuals to articulate their knowledge, reasoning, or problem-solving processes in a specific domain. By articulating problem-solving processes, learners come to a better understanding of their thinking processes, and they are better able to explain things to themselves and to others. Articulation also helps to make learning – and reflection – visible.