

# Narrative means to professional ends

## *New strategies for teaching CanMEDS roles in Canadian medical schools*

Allan Peterkin MD FCFP FRCP Michael Roberts MD FCFP Lynn Kavanagh MSc Tom Havey MD

### Abstract

**Problem addressed** Medical students in training are rarely encouraged to engage in reflective thinking around clinical encounters. Writing exercises can be an effective route for encouraging student reflection.

**Objective of program** The purpose of this pilot project was to determine if using reflective writing in teaching the CanMEDS roles helps to increase students' understanding of the roles in the clinical context.

**Program description** A pilot project was undertaken with 10 third-year medical students at the University of Toronto in Ontario. Students wrote about a different CanMEDS role for each session based on supplied writing prompts. Students also completed a Narrative Reflection Tool at the end of each group session. A selection of writing samples was assessed for reflection and for an understanding of the CanMEDS roles. Students were also given an opportunity to provide feedback on the program.

**Conclusion** Students demonstrated a good grasp of the CanMEDS roles, strong reflective capacity, and engagement in the learning process. Results suggest reflective writing has an important role in encouraging personal reflection and reflective thinking in the clinical context.

#### EDITOR'S KEY POINTS

- One of the most promising, well-studied methods of teaching reflectivity is the use of reflective writing within the medical curriculum. The purpose of this pilot project was to examine the potential for reflective writing to teach and increase understanding of the CanMEDS roles in undergraduate medical education and to evaluate students' reflective capacity.
- At the end of each group session, students completed the Narrative Reflection Tool, an open-ended questionnaire designed to guide reflection inherent in the students' writings.
- Based on the findings from this pilot study, both the virtual and in-person reflective writing electives have proved to be promising modalities for increasing reflective capacity for students. Students also demonstrated a deepening of their understanding of the CanMEDS roles.

---

This article has been peer reviewed.  
*Can Fam Physician* 2012;58:e563-9

# Des moyens narratifs à des fins professionnelles

## Nouvelles stratégies pour enseigner les rôles CanMEDS dans les facultés de médecine canadiennes

Allan Peterkin MD FCFP FRCP Michael Roberts MD FCFP Lynn Kavanagh MSc Tom Havey MD

### Résumé

**Problème à l'étude** On incite rarement les étudiants en médecine à utiliser la pensée réflexive à propos des cas qu'ils rencontrent en clinique. Les exercices de rédaction peuvent s'avérer un moyen efficace de susciter la réflexion chez l'étudiant pour l'étudiant de réfléchir.

**Objectif du programme** Ce projet pilote avait pour but de déterminer si, dans le cadre de l'enseignement des rôles CanMEDS, la rédaction réflexive peut accroître sa compréhension de ces rôles en clinique.

**Description du programme** Dix étudiants de troisième année de médecine à l'Université de Toronto, en Ontario, ont participé à un projet pilote. À la réception d'un message écrit, ils ont rédigé un texte sur un rôle CanMEDS, qui différait à chaque session. Ils ont aussi répondu aux questions d'un outil de réflexion narratif à la fin de chaque séance de groupe. Une sélection d'échantillons de ces rédactions a servi à évaluer la réflexion et la compréhension des rôles CanMEDS. On a également permis aux étudiants de fournir des commentaires sur le programme.

**Conclusion** Les étudiants ont démontré une bonne compréhension des rôles CanMEDS, une excellente capacité réflexive et une bonne participation au processus d'apprentissage. Les résultats laissent entendre que la rédaction réflexive est un bon moyen d'encourager la réflexion personnelle et la pensée réflexive en clinique.

#### POINTS DE REPÈRE DU RÉDACTEUR

- Une des façons les mieux étudiées et les plus prometteuses d'enseigner la réflexion est l'utilisation de rédactions réflexives durant le curriculum de médecine. Ce projet pilote avait pour but de vérifier si de tels textes réflexifs pouvaient améliorer la compréhension des rôles CanMEDS durant le premier cycle de la formation médicale et d'évaluer la capacité de réflexion des étudiants.
- À la fin de chaque séance de groupe, les étudiants ont répondu aux questions de l'outil de réflexion narratif, un questionnaire à réponses ouvertes devant servir de guide à la réflexion inhérente aux textes rédigés par les étudiants.
- D'après les résultats de cette étude pilote, les cours facultatifs sur la rédaction réflexive virtuelle ou en personne se sont révélés des moyens prometteurs pour accroître la capacité réflexive des étudiants. Ces derniers ont aussi fait preuve d'une meilleure connaissance des rôles CanMEDS.

Cet article a fait l'objet d'une révision par des pairs.  
*Can Fam Physician* 2012;58:e563-9

The CanMEDS curriculum, developed by the Royal College of Physicians and Surgeons of Canada and recently adapted by the College of Family Physicians of Canada, identifies 7 professional roles a physician should fulfil and practise throughout his or her career. These roles include professional, expert, advocate, communicator, collaborator, manager, and scholar (Table 1).<sup>1</sup>

Little has been published on how these roles are taught in Canadian medical schools. However, a growing literature with international scope supports the use of writing exercises as an effective route for encouraging student reflection around clinical encounters and professionalism.

*Reflection* has been defined as “a generic term for those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to a new understanding and appreciation.”<sup>2</sup> The reflective practitioner, then, is one who uses reflection as a tool for revisiting experience both to learn from it and for the framing of complex problems of professional practice. One of the most promising, well-studied methods of teaching reflectivity is the use of reflective writing within the medical curriculum.

Reflective writing undertaken by medical students helps them to represent, using a language-based narrative, their experiences in the study and practice of medicine.<sup>3</sup> Meaningful interactions with patients, colleagues, and society at large can often be best described in subjective and personal terms rather than through comparatively dry scientific reporting or brief case presentations. Such reflection includes consideration of the larger context, the meaning, and the implications of an experience or action, allowing the student practitioner to integrate or rework concepts, skills, and values into their cognitive framework.<sup>4,5</sup> Practitioners who have developed their reflective abilities through writing can better identify and interpret their own emotional responses to patients, identifying and acting upon hidden attitudes or feelings that might hinder communication so as to care for their patients with engaged presence, rather than detachment. Reflection offers an explicit approach to the integration of personal beliefs, attitudes, assumptions, and values.<sup>6</sup>

Academic family physicians are particularly well known and respected for their narrative competence and reflective capacity and are often asked to be facilitators, instructors, and preceptors in medical curricula involving integrating the “head and the heart.” Reflective writing and, more broadly, narrative-based medicine provide educators with new and powerful tools to encourage and deepen reflective practice.

The purpose of this pilot project was to examine the potential for reflective writing to teach and increase understanding of the CanMEDS roles in undergraduate medical education and to evaluate students’ reflective capacity.

## Program

**Participants.** Participants were third-year medical students enrolled in the Faculty of Medicine at the University of Toronto in Ontario who volunteered to take part in a reflective writing group about the CanMEDS roles, either in a classroom or in an online “virtual” group. Students volunteered to participate in the group if they wished to do so (self-selection). The course was presented as an elective and was offered outside of the regular clerkship curriculum. In total, 10 students participated in the course—6 in the classroom group and 4 in the virtual group.

**Setting.** Students participated in 8 sessions over 16 weeks, either in 1.5-hour classroom sessions or online. At each session, students were given an open-ended writing prompt created specifically for this course, based on a CanMEDS role (Table 1).<sup>1</sup> Students were expected to write on their own time for about 45 minutes in the 2-week period between sessions.

At each group session, 2 volunteers read their pieces (or posted them to the online forum), and other group members asked questions and shared responses. The group leaders facilitated the discussion and provided feedback. Students were provided with guidelines on giving constructive feedback.

**Questionnaires and writing evaluations.** At the end of each group session, students completed the Narrative Reflection Tool (NRT), an open-ended questionnaire designed for guiding reflection inherent in the students’ writings.<sup>7</sup> It was hoped the process would lead to deeper contemplation of the story and of the situation on which it was based. The questions for personal reflection were as follows:

- Why did you choose this story?
- Could anything have been done differently?
- What questions or issues does this story raise?
- What are the learning points?

Writings were evaluated using 2 rubrics—the LEAP and REFLECT rubrics—to determine if students’ narratives exhibited reflectivity.<sup>8,9</sup> Both rubrics have been tested and found to be valid and reliable measures of structured assessments of critical self-reflection.

The REFLECT rubric measures student reflection levels within reflective writing exercises using 4 levels of scoring, from 1 (unsatisfactory) to 4 (superior) for reflective capacity. It identifies 5 categories of reflective activity<sup>10</sup>:

- voice and presence;
- description of conflict or disorienting dilemma, insight, and reflection;
- attending to emotions;
- critical analysis and meaning making; and
- overarching concept or construct or definition.

**Table 1. CanMEDS role definitions and writing prompts used to encourage reflection**

| CANMEDS ROLES | DESCRIPTION: PHYSICIANS ARE ABLE TO ...   | WRITING PROMPT  |
|---------------|---|---|
| Professional  | <ul style="list-style-type: none"> <li>• Demonstrate a commitment to their patients, profession, and society through ethical practice</li> <li>• Demonstrate a commitment to their patients, profession, and society through participation in profession-led regulation</li> <li>• Demonstrate a commitment to physician health and sustainable practice</li> </ul>   | <b>From what you have seen and heard, what makes a good doctor?</b>           |
| Expert        | <ul style="list-style-type: none"> <li>• Function effectively as consultants, integrating all of the CanMEDS roles to provide optimal, ethical, and patient-centred medical care</li> <li>• Establish and maintain clinical knowledge, skills, and attitudes appropriate to their practice</li> <li>• Perform a complete and appropriate assessment of a patient</li> <li>• Use preventive and therapeutic interventions effectively</li> <li>• Demonstrate proficient and appropriate use of procedural skills, both diagnostic and therapeutic</li> <li>• Seek appropriate consultation from other health professionals, recognizing the limits of their expertise</li> </ul>           | <b>Write about a time when you did or didn't know what to do or say</b>       |
| Advocate      | <ul style="list-style-type: none"> <li>• Respond to individual patient health needs and issues as part of patient care</li> <li>• Respond to the health needs of the communities that they serve</li> <li>• Identify the determinants of health of the populations that they serve</li> <li>• Promote the health of individual patients, communities, and populations</li> </ul>  | <b>Write about a time you did or didn't stand up for a patient</b>            |
| Communicator  | <ul style="list-style-type: none"> <li>• Develop rapport, trust, and ethical therapeutic relationships with patients and families</li> <li>• Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals</li> <li>• Accurately convey relevant information and explanations to patients and families, colleagues, and other professionals</li> <li>• Develop a common understanding on issues, problems, and plans with patients and families, colleagues, and other professionals to create a shared plan of care</li> <li>• Convey effective oral and written information about a medical encounter</li> </ul> | <b>Write about a misunderstanding</b>   |
| Collaborator  | <ul style="list-style-type: none"> <li>• Participate effectively and appropriately in an interprofessional health care team</li> <li>• Effectively work with other health professionals to prevent, negotiate, and resolve interprofessional conflict</li> </ul>  | <b>Write about being on a team</b>  |
| Manager       | <ul style="list-style-type: none"> <li>• Participate in activities that contribute to the effectiveness of their health care organizations and systems</li> <li>• Manage their practice and career effectively</li> <li>• Allocate finite health care resources appropriately</li> <li>• Serve in administration and leadership roles, as appropriate</li> </ul>  | <b>Write about a time when you were asked to find resources for a patient</b> |
| Scholar       | <ul style="list-style-type: none"> <li>• Maintain and enhance professional activities through ongoing learning</li> <li>• Critically evaluate information and its sources, and apply this appropriately to practice decisions</li> <li>• Facilitate the learning of patients, families, students, residents, other health professionals, the public, and others, as appropriate</li> <li>• Contribute to the creation, dissemination, application, and translation of medical knowledge</li> </ul>  | <b>Write about a time when your learning was optimized or hampered</b>        |

Data from Frank.<sup>1</sup>

The LEAP rubric measures reflective capacity by assigning narratives an overall score based on concepts of “lessons learned”—using external evidence (broadly defined as data, information from professional associates, feedback from patients, or previous experiences), connecting with feelings, and evaluating one’s experiences.<sup>8</sup> Scores range from 0 to 6, with the higher number indicating more reflective capacity. Students’ ability to integrate these lessons into future experiences and

clinical encounters, reflect upon them, and integrate them into future scenarios and situations is an important element in earning a higher score on the reflection performance rating on this scale.

Finally, writings were assessed to determine if students demonstrated a grasp and understanding of specific CanMEDS roles as defined by the Royal College of Physicians and Surgeons of Canada<sup>1</sup> and were assigned 1 of 4 ratings (very little, somewhat, good, or excellent).

A sample of 8 student writings (representing approximately 25% of all available or submitted writings)—4 from the classroom group and 4 from the virtual group—were assessed for reflective capacity using the 2 rubrics by 3 separate evaluators. Writings were also graded on their conveyed understanding of CanMEDS roles. Scoring was discussed by readers for agreement. Where scores varied among evaluators, they usually only differed by a point or half of a point, and evaluators discussed the story's attributes to reach a consensus about the ratings.

In order to allow thematic comparisons, writing samples were selected, as much as possible, based on the availability of a story about the same CanMEDS role across 4 students. Selection also involved choosing stories from 2 students in each of the classroom and virtual groups.

**Feedback and evaluation form.** An anonymous feedback questionnaire was completed by participants. Its purpose was to determine if students found that this elective and the model of reflective writing (including the sharing of pieces) met their learning needs. Students were asked a number of questions about their experiences, the value of both the workshop and reflective writing to them as clinicians, and if or how the workshop helped them better understand the CanMEDS roles. Students were also given an opportunity to offer suggestions and to quantitatively rate the program. The scores for the responses on the overall evaluation question ranged from 1 (excellent) to 4 (poor).

## Discussion

**Writing evaluations.** Results from the LEAP rubric illustrate students had good reflective capacity (Table 2). Most of the students received a score of at least 4, demonstrating that students included external evidence of lessons learned into the clinical experience they were writing about. Only 2 stories were assigned a number less than 4, with 1 story being scored as a 3 and another receiving a 0. The score of 0 was assigned because the student chose to write about a different topic than the one assigned, resulting in an automatic 0 rating. The story which received a score of 3 showed some lessons learned, but external evidence was not incorporated into the learning.

The REFLECT rubric results involved coding for multiple elements. Overall, students' scores showed sound reflective capacity with strong results on the various factors making up the rubric (Table 2). In most cases, students were given a rating of 3 on the 4-point scale for each of the 5 elements, although 1 story received a score of 4 across the board and another received a score of 2.5 on 1 of the 5 elements.

Students also demonstrated a solid understanding of the assigned CanMEDS role with half of their stories being coded as showing an excellent understanding of the respective role (Table 2). Of the remaining 4 stories, 3 showed a good understanding and 1 story was coded as somewhat showing understanding. Among the sampling of stories evaluated, 3 of the CanMEDS roles were represented (professional, advocate, and scholar).

**Table 2. Results from the REFLECT rubric, the CanMEDS understanding scores, and the LEAP rubric**

| STORY       | LEAP RUBRIC* | REFLECT RUBRIC DESCRIPTIVE ELEMENTS FOR EVALUATING NARRATIVES*      |                    |  |                       |                                      |  |
|-------------|--------------|---|--------------------|--|-----------------------|--------------------------------------|--|
|             |              | DID THE STORY SHOW UNDERSTANDING ABOUT THE SPECIFIED CANMEDS ROLE?† | VOICE AND PRESENCE | DESCRIPTION OF CONFLICT OR DISORIENTING DILEMMA, INSIGHT, AND REFLECTION | ATTENDING TO EMOTIONS | CRITICAL ANALYSIS AND MEANING MAKING | OVERARCHING CONCEPT OR CONSTRUCT OR DEFINITION |
| Story 1 (V) | 3            | 3   | 3.5                | 3  | 3                     | 3                                    | 3  |
| Story 2 (V) | 4            | 3   | 3                  | 3  | 3                     | 3                                    | 3  |
| Story 3 (V) | 0            | 2   | 3                  | 3  | 2.5                   | 3                                    | 3  |
| Story 4 (V) | 5            | 4   | 4                  | 4  | 4                     | 4                                    | 4  |
| Story 5 (C) | 4            | 3   | 4                  | 3  | 3                     | 3                                    | 3  |
| Story 6 (C) | 4            | 4   | 4                  | 3  | 3                     | 3                                    | 3  |
| Story 7 (C) | 5            | 4   | 4                  | 3.5  | 3                     | 4                                    | 3  |
| Story 8 (C) | 4            | 4   | 4                  | 3  | 3                     | 3                                    | 3  |

C—classroom group, V—virtual group.

\*Possible scores range from 0 to 6, with higher numbers indicating more reflective capacity.

†Scoring was as follows: 1—very little, 2—somewhat, 3—good, 4—excellent.

\*Scoring was as follows: 1—unsatisfactory, 2—needs improvement, 3—satisfactory, 4—superior.

**Narrative Reflection Tool.** Eight samples of the NRT—those matching the sampled stories—were reviewed, and several key themes along with student-identified learning points emerged.

The NRT asked students why they chose to write about particular stories. Students generally chose incidents they had witnessed or experienced in which they felt silenced, felt uncertainty or anxiety, or encountered a dilemma. (Not surprisingly, these situations tend to be what induces reflection in more experienced clinicians as well.)

Problem solving and behavioural change were also encouraged in the NRT, which asked “What could have been done differently?” Students’ comments revealed that they showed an inclination toward behavioural change. For example, a student writing about the advocacy role revealed she had doubted herself, then later her sense about the seriousness of a patient’s symptoms turned out to be correct. When asked what could have been done differently, the student stated, “I could have reacted more quickly and doubted myself less.”

The NRT also asked students to describe problems to be solved, with examples of successful or suboptimal performance, and to identify lessons learned so that the current “reflection on action” could be translated into “reflection in action” in future situations.

In a few cases, the learning points identified by students reiterated specific CanMEDS roles and principles, demonstrating that these roles were “fleshed out” in the act of writing incident-based stories.

Students’ responses on the NRT showed that they understood the uniqueness of each patient and his or her experience. The process of writing and reflecting allows students to step back and review the situation after what might have been a hectic, uncertain, or hurried scenario, thus gaining insights on their experience. The 4-point format of the questioning in this tool and its use after every piece of reflective writing appeared to provide a user-friendly template for analyzing experiences and encounters and planning new strategies for the future.

**Uniqueness of program.** This is the first published initiative to require students to write about clinical and learning encounters using novel CanMEDs-derived writing prompts. (It was also the first creative and reflective writing elective offered at the University of Toronto medical school.) The emphasis on creating narratives about specific incidents and shaping them with a beginning, middle, and end resulted in students moving past a theoretical understanding of professionalism (“telling”) and instead embodying specific roles (“showing”) while taking a stand on what happened in their stories in a manner comprehensible to others. This approach to defining and teaching narrative competence has helped to shape the undergraduate

Portfolio Course, which was launched in 2010 at the University of Toronto medical school.

The Accreditation Council for Graduate Medical Education in the United States and other bodies overseeing medical education have identified similar professional roles that physicians are advised to learn and practise throughout their careers. Advocates of both narrative-based primary care (in the United Kingdom) and narrative medicine (in the United States) already encourage doctors to write about their personal, professional, and clinical experiences in order to enhance their reflective capacity. The creation and use of writing prompts based specifically on defined professional roles is thus timely, feasible, and relevant within both narrative-based schools of thought and is strongly encouraged by the authors of this paper as a relevant and necessary application of narrative-based learning in medical education worldwide.

**Feedback and evaluation form.** A number of strengths of the program were identified by students as well as suggested areas for improvement. Overall, students were very satisfied with the program, stating that their learning expectations were met and the experience was a positive one, although students in the classroom group expressed slightly higher satisfaction than those in the virtual group. **Table 3** outlines the results from the course evaluation rating scale.

**Table 3. Results from the overall course evaluation question on the feedback questionnaire: The scoring for the responses on the overall evaluation question was as follows: 1—excellent, 2—good, 3—fair, 4—poor. Therefore, a lower score is indicative of higher satisfaction.**

| ITEM*              | CLASSROOM GROUP | VIRTUAL GROUP | BOTH GROUPS |
|--------------------|-----------------|---------------|-------------|
| Content            | 1.00            | 1.33          | 1.14        |
| Presentation       | 1.25            | 1.33          | 1.29        |
| Exercises          | 1.00            | 1.67          | 1.29        |
| Coaches            | 1.00            | 1.33          | 1.14        |
| Size of group      | 1.00            | 2.67          | 1.71        |
| Location           | 1.25            | NA            | NA          |
| Time               | 1.25            | NA            | NA          |
| Readings           | Missing         | Missing       | Missing     |
| Overall evaluation | 1.11            | 1.67          | 1.35        |

NA—not applicable.  
 \*\*“Food” was excluded from the list of individual items but is included in the overall evaluation score.

**Limitations and challenges.** This program would benefit from measurement of reflective capacity before and after participation, but our small pilot sample limited

our ability to utilize quantitative measures. The number of students who participated was small relative to the number of students enrolled in the third-year medicine program (N=224). Self-selection bias might have affected the results in that students who volunteered to participate in this elective might already have had a greater interest in writing or self-reflection. Nonetheless, the qualitative data results demonstrate that a reflective writing intervention has potential for increasing the reflective capacity of third-year medical clerks, offering insight and promise for a future study using similar methodology along with measurement of reflective capacity before and after participation.

Another issue related to the small sample size was the challenge of recruiting students for this new elective (pilot) program in the context of their busy clerkship schedules. The initial goal was to have 8 students in each of the classroom and virtual groups, for a total of 16 students. The actual number included in our analysis was 8.


Finally, students in the virtual group noted some dissatisfaction with the online posting of stories, finding the process impersonal because the group did not meet in person at any point in the elective. Although the virtual program offered benefits in terms of enabling participation for students with busy schedules, offering an introductory meeting with facilitators and participants might have provided the personal touch needed.

**Future goals.** Although the sample was small, the overall narrative model and multifocal research methodology described above will be incorporated into a newly implemented Portfolio Course at the University of Toronto. The Portfolio Course (which was officially launched in the 2010 to 2011 school year) is a mandatory educational reflection endeavour that requires students to produce reflective writing or other creative expressions centred on their clinical experiences. It is hoped that a larger sample will be obtained as students in the new course are encouraged to participate in the research component. This will involve using the same measures and feedback tools described above, in addition to 3 quantitative measures: a reflection scale,<sup>11</sup> the Groningen Reflection Ability Scale,<sup>12</sup> and the Jefferson Scale of Physician Empathy.<sup>13</sup>

## Conclusion

Based on the findings from this pilot study, both the virtual and in-person reflective writing electives have proved to be promising modalities for increasing reflective capacity for students. Furthermore, students described a wellness component, in that the sharing of writing allowed for debriefing with respect to stressful, challenging, or inspiring events which were occurring early in their clerkships. Students also demonstrated

a deepening of their understanding of the CanMEDS roles. Further study with a larger group of students will provide us with more information about the effects of reflective writing on the learning of professional roles and consolidation of physician identity.

As the adapted CanMEDS–Family Medicine roles and competencies have been adopted as key principles of family medicine, this pilot study also has important implications for the application of innovative narrative-based pedagogy for the education and training of family physicians in Canadian residency programs. 

**Dr Peterkin** is Associate Professor in the Department of Psychiatry at the University of Toronto and Head of the Health, Arts and Humanities Program at Mount Sinai Hospital in Toronto, Ont. **Dr Roberts** is Assistant Professor and Humanities Lead in Healthcare in the Department of Family and Community Medicine at the University of Toronto. **Ms Kavanagh** is a research assistant in the Department of Psychiatry at Mount Sinai Hospital. **Dr Havey** is a resident in internal medicine at the University of Toronto.

### Acknowledgment

We thank **Drs Pier Bryden** and **Ken Locke**, pilot and course directors of the Portfolio Course. For funding support, we thank the Undergraduate Medical Education Program of the Faculty of Medicine at the University of Toronto, the Education Deans Fund of the Faculty of Medicine at the University of Toronto, the Ontario Ministry of Health, and the Professional Development Fund of the Department of Family and Community Medicine at the University of Toronto. Thanks also to **Dr Lynn Wilson**, Chair of the Department of Family and Community Medicine at the University of Toronto, and to **Dr Molyn Leszcz**, Head of the Department of Psychiatry at Mount Sinai Hospital, for their support for this initiative, and to **Dr Hedy Wald** of Brown University who acted as a consultant to the project.

### Contributors

All authors contributed to the concept and design of the study; data gathering, analysis, and interpretation; and preparing the manuscript for submission.

### Competing interests

None declared

### Correspondence

**Dr Allan D. Peterkin**, Health, Arts and Humanities Program, Mount Sinai Hospital, Room 963, 600 University Ave, Toronto, ON M5G 1X5; telephone 416 586-4800, extension 3204; fax 416 586-5970; e-mail [apeterkin@mtsina.on.ca](mailto:apeterkin@mtsina.on.ca)

### References

1. Frank JR, editor. *The CanMEDS 2005 physician competency framework. Better standards, better physicians, better care.* Ottawa, ON: Royal College of Physicians and Surgeons of Canada; 2005. Available from: [www.royalcollege.ca/portal/page/portal/rc/common/documents/canmeds/resources/publications/framework\\_full\\_e.pdf](http://www.royalcollege.ca/portal/page/portal/rc/common/documents/canmeds/resources/publications/framework_full_e.pdf). Accessed 2012 May 3.
2. Boud D, Keogh R, Walker D. *Reflection: turning experience into learning.* London, UK: Kogan Page; 1985.
3. Charon R. Reading, writing, and doctoring: literature and medicine. *Am J Med Sci* 2000;319(5):285-91.
4. Moon J. *A handbook of reflective and experiential learning.* London, UK: Routledge; 1999.
5. Eva KW, Regehr G. Self-assessment in the health professions: a reformulation and research agenda. *Acad Med* 2005;80(10):S46-54.
6. Epstein RM. Mindful practice. *JAMA* 1999;282(9):833-9.
7. Greenhalgh T, Collard A. *Narrative based health care: sharing stories.* London, UK: BMJ Books; 2003.
8. Learman LA, Autry AM, O'Sullivan P. Reliability and validity of reflection exercises for obstetrics and gynecology residents. *Am J Obstet Gynecol* 2008;198(4):461.e1-10.
9. Wald HS, Borkan JM, Taylor JS, Anthony D, Shmuel PR. Fostering and evaluating reflective capacity in medical education: development of the REFLECT (Reflection Evaluation For Learners' Enhanced Competencies Tool) rubric for reflective writing. *Acad Med* 2012;87(1):41-50. Erratum in: *Acad Med* 2012;87(3):355.
10. Wald HS, Reis SP, Borkan JM. Reflection rubric development: evaluating medical students' reflective writing. *Med Educ* 2009;43(11):1110-1.
11. Kember D, Leung DYP, Jones A, Loke AY, McKay J, Sinclair K, et al. Development of a questionnaire to measure the level of reflective thinking. *Assess Eval High Educ* 2000;25(4):381-95.
12. Aukes LC, Geertsma J, Cohen-Schotanus J, Zwierstra RP, Slaets JP. The development of a scale to measure personal reflection in medical practice and education. *Med Teach* 2007;29(2-3):177-82.
13. Hojat M, Mangione S, Nasca TJ, Cohen MJ, Gonnella JS, Erdmann JB, et al. The Jefferson Scale of physician empathy: development and preliminary psychometric data. *Educ Psychol Meas* 2001;61(2):349-65.