“Directed” Self-Assessment: Practice and Feedback Within a Social Context

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Introduction: Accurate self-assessment appears to be difficult and, some would propose, even impossible. Recent reviews suggest that peer assessment may be more accurate and that multisource feedback (MSF) may inform self-assessment. We had conducted a series of studies of family physicians in an MSF program including assessments from patients, medical colleagues, and coworkers and self-assessment. Using this body of research, this article explores self-assessment within the social context of multisource feedback and investigates the influence of feedback from peers and others upon self-assessment.

Methods: This is a review article in which we synthesized findings of the series of studies with respect to self-assessment, used conclusions to propose a model for self-assessment within a social context, and suggest practical and research implications.

Results: Physicians compared peers’ and others’ assessment feedback with global self-perceptions of performance. Negative feedback, especially from medical colleagues, that was inconsistent with self-perceptions was not readily reconciled with self-assessments. Multiple internal and environmental factors influenced reconciliation and assimilation of negative feedback. Reflection upon feedback and self-perceptions appeared to be instrumental to reconciliation, and reflection could be facilitated.

Discussion: We propose a model of “directed” self-assessment to facilitate the integration of external feedback, especially negative feedback, with self-perceptions and enable its use for practice improvement. Implications for education and research include increasing understanding of ways physicians assimilate external feedback and of the role of educators as facilitators of “directed” self-assessment and self-learning to assist physicians in integrating external feedback.

Key Words: self-assessment, self-perception, feedback, assessment, learning, practice change, continuing professional development (CPD), multisource feedback

Introduction

There appears to be a dilemma in medical education with respect to self-assessment. While individual self-assessment and self-regulation are activities intrinsic to professional behavior, evidence now suggests that accurate self-assessment may be an unrealistic goal. Recent reviews, both selective and systematic, conclude that self-assessment undertaken as an individually conducted internal activity has little accuracy or reliability. Additionally, those with the least proficiency in a domain tend to overestimate their capacities most and to be inaccurate self-assessors.

Evidence to date also suggests research directions to increase understanding of individual self-assessment and particularly the influence of external resources. Eva and Regehr (2005) reviewed self-assessment from various theoretical perspectives, one of which was social cognitive theory, which acknowledges that much of human learning occurs within a social environment. Learning about ourselves requires looking outward to that environment, especially to the responses of others to our behavior, and using this feedback to inform our assessments of ourselves. Within this context, Eva and Regehr suggested that peers may be a more accurate source of assessment feedback than self-assessment. Davis and associates (2006) also identified the need to explore self-assessment using a broader lens, specifically its use within each of the Royal College of Physicians and Surgeons of Canada CanMEDs physician competencies (eg, communicator,
collaborator, manager), and in multisource feedback, which uses performance feedback from peers and others to inform self-assessment.

The discourse of self-assessment within secondary and higher education presents self-assessment not as an individual activity but as a social activity that should be both formative and facilitated. The intent of self-assessment, like that of assessment in general, is to inform learners’ and practitioners’ judgments about their performance and knowledge. Teachers play an important role in guiding self-assessment activities to enable learners to evaluate the quality of their own performance, develop reflective skills, and become actively engaged in their continued learning. Two important components of self-assessment are accurately identifying external standards and criteria to apply to one’s own work and making informed judgments about the extent to which these standards are met. These skills, and others including reflective and critical thinking skills, can be explicitly taught and facilitated and their formal instruction should be included in university and professional education.

Some skills, like “critical self-reflection,” are central to self-assessment, while others may be subject and context specific.

Self-assessment as a socially influenced activity is complex. Multiple factors influence self-assessment capacity and accuracy including the nature of the performance and domains being assessed, clarity of assessment criteria, amount and quality of direction and feedback provided, context, and affective domains such as self-efficacy, motivation, and perceptions of autonomy, competence, and relatedness. Notably, enabling reconciliation of self-assessments with supervisors’ judgments and other external measures enhances self-assessment capacity and accuracy, and teacher feedback and facilitation can aid these processes.

In summary, educators tend to see self-assessment as a social activity that comprises specific teachable skills and is informed and facilitated by external sources to increase accuracy. In contrast, research in medical education has to date viewed self-assessment more narrowly as an individual and frequently inaccurate activity, but it has also identified need to investigate the influence of external resources, especially peers and others. These conclusions led us to consider our 5-year study of multisource feedback (MSF) as an opportunity to explore self-assessment within a social context and investigate the influence of feedback from peers and others (see FIGURE 1). The objectives of this article are (1) to synthesize findings of the series of studies with respect to self-assessment, (2) to use the results to propose a model for self-assessment within a social context, and (3) to discuss practical and research implications.

**Review of the Studies**

**Background**

We conducted six studies of a standardized MSF program implemented for family physicians, predominantly in office practice, in one Canadian province. The studies are summarized in TABLE 1. For each physician assessment, the program requested completion of performance questionnaires by 25 patients, 8 medical colleagues, and 8 coworkers and a
self-assessment. Questionnaires were specific to each reviewer group to reflect the unique relationship of each with family physicians. The self-assessment and medical colleague questionnaires contained the same items. Questionnaire length ranged from 17 to 42 items rated on a 5-point Likert scale. Domains assessed included clinical competence; communication with patients, colleagues, and coworkers; professionalism; and practice and self-management. Scores were compiled for each domain and participants received a mailed confidential report presenting their mean scores and aggregate scores, and comparing their self-assessment scores with those of medical colleagues. Feedback was not facilitated but assistance was available upon request.

Overview of Individual Studies and Findings

Overall research questions addressed in the six studies were (1) How did physicians use their MSF for learning and practice change? and (2) What conditions influenced their use of MSF for learning and practice change? The first study described the MSF program implementation and physician participants’ (n = 142) scores and initial responses to MSF, including their assessment of its value and use of feedback for practice change.21 We found somewhat surprising results regarding acceptance of external feedback, including positive correlations between physicians’ agreement with their feedback and scores received: ie, they agreed with higher scores more readily than with lower scores. Further, physicians more frequently disagreed with medical colleagues’ feedback that that of patients or coworkers.

We undertook a second study, a qualitative study, to understand these results better and conducted focus groups with physician participants several months after receiving their mailed feedback reports.22 Findings demonstrated that multiple factors influenced responses to feedback, especially negative feedback. Physicians responded with negative emotion to feedback inconsistent with self-perceptions of performance, questioned its credibility, and were not inclined to use it.

Such results indicated the need for further in-depth exploration of factors influencing feedback acceptance and use. We therefore conducted interviews with 28 physicians representing participants receiving scores across the range from high to low. Study 3 was undertaken to investigate feedback and its use in specific domains of performance, eg, clinical expertise, communication skills, and factors influencing this use.23 We learned that most practice changes were reported in response to specific, credible feedback consistent with other sources of performance feedback. Such feedback was most frequently received from patients and least, from medical colleagues.

Study 4 explored in more depth the 28 interviewed physicians’ sensitivities to MSF.24 Several study 2 physicians receiving negative feedback had responded with strong negative emotion, and this study explored emotional responses to MSF, the sources of these emotions, and their influence upon accepting and using the feedback.22 Findings demonstrated that negative feedback, ie, feedback inconsistent with self-perceptions, can evoke strong negative feelings that interfere with its assimilation and acceptance. Potential
interventions to address these responses include raising awareness about the influence of emotions, assisting recipients to focus their feedback on specific performance tasks, and facilitating external feedback.

In study 5, we specifically investigated the reflective responses described by the 28 interviewed physicians as they considered their assessment feedback, and the perceived utility of this reflection. Reflection appeared to be the process through which feedback inconsistent with self-perceptions was reconciled with those self-perceptions and assimilated and in fact appeared instrumental to the assimilation process. Facilitating participants’ reflection upon emotions and feedback content was perceived to influence assimilation and acceptance positively.

The final study addressed a third research question, “How do physicians learn in practice?” We interviewed 12 participants receiving high MSF scores, reasoning that learning approaches reported by physicians rated highly by others could offer insights into successful approaches for continued learning, and especially into self-assessment of learning needs. Within this group, informal learning through colleagues and patients appeared fundamental to remaining competent, and formal structured education sessions appeared less useful. These physicians appeared intentional, self-aware, self-directed, and reflective in their learning. Surprisingly, their perceptions of professional competence were generally limited to the clinical expert domain, and they tended to perceive communication skills as innate characteristics rather than learnable skills.

Synthesis of Results

What did we learn from these studies about use of external resources to inform self-assessment? Foremost, physicians tended to assess whether external feedback was generally negative or positive by comparing it with their global self-perceptions of performance, not only with task-specific self-assessments. Negative feedback for some disconfirmed long-held self-perceptions of being “good doctors.” This appeared to influence their ability to reconcile external feedback with self-perceptions and hence to assimilate and accept it. Reconciliation of feedback with self-perceptions, in fact, appeared to be a primary step and fundamental to assimilating, accepting, and using external feedback.

Participants assessed the credibility of the external feedback received and described difficulty in reconciling feedback that lacked credibility with self-perceptions. Ideally for MSF to be effective, the reviewer needs to be able actually to observe performance. These physicians confirmed this; credible feedback meant that it was based on observation of the performance in question. Physicians reported that as medical colleagues were rarely able to observe them in their practices, their feedback lacked credibility. Lack of credibility was a barrier to accepting and reconciling feedback inconsistent with self-assessments. Conversely, physicians assimilated negative feedback from patients more readily as, understandably, patients directly observed their performance.

Similarly, physicians also reported more readily integrating negative feedback from patients because it was specific; ie, the questionnaire items were clear and guided learning and performance change. Examples included “Your doctor explained your treatment choices” and “Your doctor told you of any side effects of the medicine.” Alternatively, items on the medical colleague questionnaire were more general—eg, “This doctor selects diagnostic tests appropriately” and “This doctor selects the appropriate treatment”—and physicians reported difficulty in assimilating them. Specificity also varied by domain. Patient communication items were more specific and hence more readily assimilated, and those of clinical competence, more general and less easily assimilated, resulting in fewer practice changes than in communication skills.

The power of specific and credible feedback cannot be overestimated. Our findings suggest that receiving feedback that is not specific and credible, in a domain believed to be well understood, ie, clinical competence, does not inform physicians’ self-assessment and guide change and in fact can result in negative responses, eg, discouragement. Alternatively, items that provide specific feedback can guide performance improvement. Specific feedback can actually inform physicians of what is expected by making clear and explicit what might be otherwise nebulous and unclear, caused perhaps by lack of explicit standards as is currently often the case for the communication skills domain. For example, from patient reviewers, an item like “I am advised re results of tests and X-rays” clearly guides change by informing the physician about the specific performance expectation.

Emotion was a theme inherent within the processes of reconciling, assimilating, accepting, and using external feedback. Although evident early in the series of studies, the pervasive influence of emotion did not become apparent until further investigation. Because performance assessment is about “self,” it is emotionally charged and being objective about it is difficult. Feedback received from medical colleagues, patients, or coworkers that was inconsistent with self-perceptions could evoke strong negative emotions such as distress and humiliation. Further, lack of feedback credibility elicited anger and frustration toward an unfair assessment system. Lack of specificity caused frustration and even depression upon receiving feedback that change was needed but not knowing how to change, or perceiving practice or community barriers that prevented change. Such negative feelings interfered with the reconciliation of negative feedback with self-perceptions and its subsequent acceptance.

Similarly to those of emotion, the significance and utility of reflection did not become evident until later in the research. Physicians described reflecting upon their feedback and the factors influencing their assimilation and use of it, and some reflected for extensive periods. Reflection appeared as the mediating process through which physicians considered these factors and their influence, the conduit linking
external assessments and self-assessments. Successfully reconciling external and self-assessments through reflection enabled assimilation, acceptance, and use of external feedback. Importantly, physicians also believed that the reflective process could be facilitated and this would enhance reconciliation and assimilation of external feedback. Facilitation could enable assimilation of both emotional reactions and feedback content and could guide and support its use for practice improvement in a beneficial way.\textsuperscript{24,25}

In summary, the process by which physicians reconciled external feedback with self-perceptions and made decisions about whether to accept and use it was not straightforward. It was strongly influenced by internal influences, particularly self-perceptions, emotion, and reflection, and external influences, the negative nature of feedback, its credibility and specificity, and facilitation. TABLE 2 presents these factors and additional external and internal influences reported in detail in the original papers, including perceptions of the professional culture, which socializes physicians to have very high personal performance expectations,\textsuperscript{24} and of community, health system, and practice barriers. Internal factors included personal expectations as a physician and beliefs and abilities related to change, including self-efficacy and the capacity to make and implement a plan for learning and change.

Conclusions and a Model for Directed Self-Assessment

This article was stimulated by recent research in medical education suggesting that self-assessment lacks accuracy, peers may be more informed sources of assessment feedback, and MSF may provide a context for exploring relationships between self-assessment and external assessment. We propose three findings in particular that contribute to understanding of the interrelationships between self-assessment and external assessments: (1) External assessment feedback, especially from medical colleagues, which was inconsistent with self-perceptions was not readily reconciled with self-assessments. (2) Multiple internal and environmental influences moderated the reconciliation and assimilation of negative external feedback. (3) Reflection upon external feedback and one’s own self-perceptions appear instrumental to reconciliation, and reflection can be facilitated.

Taken together, these findings suggest that external feedback from peers and others that is inconsistent with self-perceptions may be discounted and may not be used to inform one’s self-assessment, similarly to results elsewhere.\textsuperscript{20,23,27,29} The consequences of this are serious in that physicians may not accept and use external feedback to improve performance. In fact, negative external feedback can have unintended consequences and actually cause demotivation and reduced performance.\textsuperscript{30,31} However, our findings also identify factors that influence feedback reconciliation and assimilation and ways to moderate their negative impact.

These conclusions together with those drawn from the education literature lead us to consider self-assessment as a social activity, one that is both formative and constructive. We believe that self-assessments of learning and practice should be informed by external resources and that the process can be enhanced by guidance and facilitation. This is similar to a recent proposal by Duffy and Holmboe (2006).\textsuperscript{32} We more specifically propose the conceptualization of “directed self-assessment” adopted from Hobma’s\textsuperscript{33} conceptualization of “directed self-learning,” proposed to capture the notion that external influences inform and guide self-direction in learning, continuing professional development, and practice improvement. Similarly, we propose “directed self-assessment” to describe self-assessment activities informed by external resources, environmental factors, and facilitation. In this conceptualization, we envision reflection as the central activity bridging external feedback and self-assessments.

In FIGURE 2 we present a model for directed self-assessment encompassing four phases: receiving feedback from external sources, reflecting upon feedback to reconcile it with self-assessments, planning for feedback use, and using feedback for learning and improvement. In step 1, external

<table>
<thead>
<tr>
<th>External Influences</th>
<th>Internal Influences</th>
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<tr>
<td>1. Nature of the feedback (ie, negative or positive)</td>
<td>1. Self-perceptions of performance</td>
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<tr>
<td>2. Feedback credibility</td>
<td>2. Emotions</td>
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<td>3. Feedback specificity</td>
<td>3. Personal expectations as a physician</td>
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<td>4. Feedback consistency with that from other sources</td>
<td>4. Beliefs and abilities regarding change:</td>
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<td>5. Professional culture</td>
<td>- Belief in ability to change</td>
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<td>6. Barriers to change (practice, health system, community)</td>
<td>- Knowing how to change</td>
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<td>7. Facilitation of feedback</td>
<td>- Ability to develop a plan for change</td>
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<td>- Ability to implement plan</td>
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<td>5. Reflection process</td>
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sources of feedback include practice standards and criteria; formal and informal feedback form medical colleagues, co-workers, and patients; and perceptions of the practice environment and broader medical culture. Step 2, reflection, accomplishes several tasks. It enables examination and integration of factors influencing responses to external feedback, assimilation of this feedback within one’s personal view of one’s practice, and provision of cognitive access to this information. Following these, feedback is then accessible for developing an appropriate plan for practice improvement, drawing upon existing resources, Step 3. Finally, plans for improvement can be implemented (Step 4). Notably, all steps, particularly those involving reflection, can and should be facilitated.8,33

Implications for Education, Continuing Professional Development, and Assessment

Directed self-assessment poses challenges for medical education and professional development, similar to those identified in the broader education literature.7–9 These include ensuring clarity of performance standards and criteria for judging performance, providing clear and relevant feedback, and taking specific steps to enable reconciliation of self-assessments with external feedback.16,17,19 We believe that conclusions of this body of research also have the following specific implications for educators and assessors in promoting accurate self-assessment.

One challenge is to ensure that external assessment feedback is credible and specific, to enhance its reconciliation with self-perceptions, and assimilation and use for practice improvement. Feedback procedures and content should reflect accepted performance standards and criteria for domains being assessed and be acceptable.7 Clarity on standards and expectations allows for a shared view of what good performance “looks like” in a particular domain. Further, although specific feedback can guide self-assessment, feedback that is not specific can actually be a barrier to self-assessment.16,19

Second, facilitating physicians’ reflection upon external feedback, their practice, and self-assessments and self-perceptions of performance can enhance reconciliation and acceptance of external feedback. Reflection is the process that links new experiences and information with existing knowledge and skills and can and should be facilitated.8,34 Examples of ways to facilitate reflection upon external feedback and self-assessments are to explore questions like the following: What standards does the physician now use to judge the quality of his or her own performance and make self-assessments? How does she judge the appropriateness and currency of these standards? What standards are used to judge the quality of external feedback? How does he integrate this external information with self-assessment information to make final judgments about performance? Are there flaws in the standards being used or the process of critical analysis?

Facilitation of reflection also includes reflection upon emotional responses to external feedback. Thoughtful reflection upon negative emotions can enhance their assimilation and enable subsequent cognitive integration and acceptance of feedback.24 Further, given the pervasive influence of emotions throughout the process, their effect may require facilitation more than once. When feedback is accepted, facilitating reflection upon ways to integrate the feedback into one’s practice and develop an action plan for learning and change can enhance use. Some refer to this aspect of facilitation as “coaching” for practice improvement.20,35

Facilitating external feedback and reflection in a manner that informs self-assessments, self-perceptions, and individual action plans is a skill for educators at all levels of the medical education continuum, one that has received little attention in the medical education literature. It requires interacting with physicians on an individual basis and suggests new skills and challenges for CPD professionals. The goal of facilitation is also to strengthen physicians’ own “directed” self-assessment skills. Education is needed to help educators develop these skills, and advice from disciplines with expertise in this field such as counseling and organi-
Lessons for Practice

- External assessment feedback that is inconsistent with self-perceptions of performance may not be readily reconciled with self-perceptions nor subsequently used for practice improvement and learning.
- Ensuring that external assessment feedback is specific and credible is key to enhancing reconciliation with self-assessments and subsequent use.
- Facilitating reflection upon feedback and its relationship and relevance to one's practice can also enhance reconciliation of negative external feedback with self-assessments.
- Consider directed self-assessment occurring within a social environment as a model for self-assessment in the "real world," ie, a model in which self-assessment is influenced by external feedback and internal and external factors and mediated by facilitation for learning and change.

zational psychology may be helpful. Questions arise as to a potential expanded facilitation role for CPD professionals: Might this role be realistic? In what kind of settings? How might it be put into practice?

Implications for future research include increasing understanding of ways physicians reconcile external feedback with self-perceptions and use it to inform their practice. In this regard, the current research is limited by the study of one volunteer population of family physicians in one Canadian province, and much broader study is required. A second important research direction is exploring and clarifying the role and explicit tasks of educators as facilitators of "directed" self-assessment and "directed" self-learning to enable reconciliation and integration of external feedback. Within this latter body of research, it is also important to understand better how the acceptance and use of feedback can be enhanced from the onset of medical education.

References


