

Peer mentoring in doctor performance assessment: strategies, obstacles and benefits

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CONTEXT Mentors are increasingly involved in doctor performance assessments. Mentoring seems to be a key determinant in achieving the ultimate goal of those assessments, namely, improving doctor performance. Little is known, however, about how mentors perceive and fulfil this role.

OBJECTIVE The aim of this paper is to expand understanding of the role of mentors in performance assessment.

METHODS Thirty-eight mentors undertook formative performance assessments of their peers in a pilot study. A mixed-methods design was used, consisting of a postal survey ($n = 28$) and qualitative interviews with a subset of mentors ($n = 11$). Individual semi-structured interviews were completed and transcripts were analysed by two researchers using a grounded theory approach.

RESULTS The results of the survey showed that 89% of mentors intended to continue in their mentorship role. Interviews revealed that

mentors used several strategies in the assessments, including: contrasting and collating information; posing reflective questions, and goal setting. Mentors experienced difficulty in disregarding their views of the doctors evaluated. Some mentors noticed obstacles with specific interview skills such as 'paying attention to their colleagues' strengths' and 'enabling doctors to find their own solutions'. Mentors reported that they and their organisations benefited from the assessments. The perceived benefits included: improved interview skills; increased solidarity, and increased mutual respect.

CONCLUSIONS The study provides insights into what mentors can do to increase the chance that externally derived information is integrated into doctors' self-assessments. Mainly, mentors used strategies aimed at effectively delivering feedback and encouraging reflection. However, we found that mentors who took part in our study appeared to struggle with a number of obstacles related to: time investment; familiarity with the doctor assessed, and the acquiring of specific interview skills.

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INTRODUCTION

Ensuring that doctors remain clinically competent throughout their careers remains a challenge.¹ As might be expected in a self-regulating profession, doctors bear responsibility for adequately detecting gaps in their own performance and taking proper actions. However, several researchers have highlighted the fact that, for cognitive (information neglect and memory biases) and socio-biological (doctors become adaptive in order to maintain an optimistic look on themselves) reasons, the adequacy of doctors' self-assessments is limited.²⁻⁴ As a result, more externally driven assessments involving, for example, 360-degree evaluations or clinical audits are required.^{5,6} Although these assessments vary, they share the underlying goal of making doctors aware of their practice with the ultimate aim of guiding self-directed learning and improving doctor performance.⁷ Nevertheless, studies have shown that doctors make few changes in practice in response to external assessments and their self-assessments seem to be stable over time.^{8,9}

As performance assessments are relatively new, research into how we can increase doctors' use of performance data is limited. What we do know is that the process of feeding information from assessments back to individual doctors and reflecting on this information appears to be a key determinant in achieving performance improvement.^{7,10,11} Research highlights the finding that a coach or mentor is necessary to guide this process.^{12,13}

Traditionally, the mentor is a trusted and faithful guide for a person who is on a journey of personal, professional and career development.¹⁴ However, different mentoring models and roles exist. In the context of performance assessment, a mentor should be perceived as someone who helps a doctor to interpret feedback and critically analyse his or her work in order to improve future performance.¹⁵

In several countries, such as the USA, the UK and the Netherlands, there are mentors (also known as appraisers or facilitators) who assist in assessment procedures and discuss feedback reports with peers.¹⁶⁻¹⁸ In a previously reported qualitative study, doctors made clear that mentors must encourage reflection, follow-up and goal setting as important conditions for the use of 360-degree feedback for practice improvement.¹⁹ This paper presents further work towards a better understanding of the role of the mentor in order that we can disclose effective

mentoring strategies and illuminate important conditions for a mentoring system. In an attempt to meet this challenge, we designed this study to explore the views and experiences of mentors who participate in doctor performance assessments. We specifically investigated how mentors perceive and fulfil their role in performance assessments that combine 360-degree feedback with a portfolio.

METHODS

Setting

In 2007, eight hospitals in the Netherlands participated in a performance assessment project.

The aim of the project was to develop and evaluate a performance assessment system that would help to improve doctor performance. The assessment system comprised self-assessments collected in a portfolio and 360-degree feedback from colleagues, co-workers (nurses or allied health care professionals) and patients. Mentors received the feedback report and the portfolio 2 weeks in advance of the assessment interview. Doctors themselves received the 360-degree feedback report from the mentor during the assessment interview. The role of the mentor was to deliver the 360-degree feedback and to encourage reflection in a face-to-face assessment interview. The outcome of this assessment interview was a personal development plan in which doctors formulated their improvement plans. A total of 109 hospital doctors from varying specialties were assessed across the eight hospitals. Thirty-eight mentors from different specialty backgrounds (12 surgeons, 14 internists, five anaesthesiologists, five clinical psychologists and two pharmacists) were appointed. A project leader selected the mentors on the basis of prior experience, interest in quality improvement and qualities as a good communicator.

Mentors were offered 1 day of training which included: explanation of the assessment system; goals of the assessment; basic interview skills (active listening), and role-plays. The emphasis in the training was on the assessment system itself and the procedures for confidentiality and objectivity. The participation of doctors and mentors was voluntary and they were not reimbursed for their work. Doctors were matched with mentors from a different specialty to avoid issues regarding familiarity. For feasibility reasons, doctors and mentors from the same hospital were matched. The assessment system used in our

study has been described in more detail in a previous article.¹⁸

Study design

We undertook a cross-sectional, mixed-methods study in two phases from 2007 to 2008 as part of a larger study into doctor performance assessments in the Netherlands. All mentors conducting performance assessments with their peer-colleagues were invited to participate in a survey probing different areas of performance, including training, preparation, satisfaction with the new role and time investments. The survey had two goals; it aimed to generate an overall view of mentors' current opinions, and to select topics for the in-depth interviews as well as mentors to be interviewed. After initial survey analysis, we used maximum variation sampling to select 11 mentors for in-depth interview. A maximum variation sample is a purposefully selected sample of persons who represent a wide range of extremes related to the phenomenon of interest. The factors we thought to be of influence for the study were: gender; specialty, and positive and negative views on satisfaction as expressed in the response to the questionnaire. We telephoned this selection of 11 mentors to invite them for a face-to-face interview. All mentors consented to participate. The interviews were undertaken in order to triangulate information collected in the survey.

Measures

Survey study

We measured mentors' perceptions before and after they had conducted the performance assessments with two separate surveys. These questionnaires were developed for this study and were subjected to piloting in order to ensure face validity. After piloting, two items were deleted from the questionnaire and two items required redefinition. The pre-assessment questionnaire consisted of six items measuring preparation and satisfaction about the training. Mentors filled out the questionnaire after the training. The post-assessment questionnaire included seven items measuring satisfaction, time investments and general views about the benefits. Mentors were asked to fill out the questionnaire after the assessment interviews. All questionnaire items were to be rated on a Likert scale of 1–5 (1 = totally disagree, 5 = totally agree). In addition, each questionnaire allowed space at the end for additional free text to capture mentors' experiences.

To encourage response, one reminder was sent to non-responders.

Interviews with mentors

Interviews took place with a purposive sample of seven male and four female mentors representing a range of specialties and views as expressed in the questionnaire. The interviews, which lasted 45–75 minutes, were conducted at mentors' offices between June and October 2008 by the first author. Semi-structured questions were used as a guide and covered mentors' perceptions of their role and their experiences with the assessments as a whole. All interviews started with a question about what mentors perceived to be the main goals of the assessment interviews. Subsequently, the mentors were asked to reflect upon the following questions:

- 1 In your perception, what did you do as a mentor to accomplish this goal/these goals?
- 2 What did you find difficult and why?
- 3 Did you perceive any benefits?

These topics were raised from the results of the survey. Mentors were encouraged to speak freely and to raise issues important to them. Anonymous processing and analysis of the interviews were guaranteed.

Data analysis

We calculated descriptive statistics for the complete set of items on the questionnaires. We compared the free text responses on the questionnaire with the help of a cross-case display matrix.²⁰ The interviews were tape-recorded with the participants' permission and transcribed verbatim. Analysis was carried out by hand using grounded theory to look for broad emergent themes. Two researchers (KO, ED) coded all the interviews independently. A cyclical approach was used to add and adapt codes. After coding four interviews, the researchers compared their findings and discussed any differences until consensus was reached. Single passages of text could generate different codes and similar codes were combined. The codes were then categorised into themes which were discussed by two researchers. The accepted coding and themes were used to analyse the remaining interviews. We stopped interviewing participants at the point when theoretical saturation was achieved. To validate the analysis, we solicited feedback from two mentors (member checking),²¹ which led to no adjustments.

RESULTS

Survey study

A total of 27 of the 38 appointed mentors completed the pre-assessment questionnaire (response rate 71%). Similarly, 28 of the 38 mentors returned the post-assessment questionnaire (response rate 74%). All initial 27 respondents completed the post-assessment questionnaire. One mentor did not attend the training and 'forgot' to complete the pre-assessment questionnaire. Analysis of the non-responders revealed that their gender distribution, age and work experience did not differ from those of responders. Table 1 summarises the results. About 91% of the mentors looked forward to facilitating performance assessments. Although they appreciated the training opportunity, mentors perceived the training to be partly insufficient. In the free text comments mentors explained that they believed more role-play related to delivering negative feedback was necessary. As a

result, only 45% felt sufficiently prepared to perform the assessments (Table 1). After the assessments, mentors indicated they were neutral to positive about their own performance as a mentor; 53% agreed with the item 'I am satisfied with my own competence as a mentor' and 37% were neutral. A majority (89%) of mentors reported that they wanted to continue their appointment as a mentor. About 71% of the mentors found their time commitments unacceptably high. However, considering the doctors' benefits, a majority (74%) found their investment worth the effort.

Interviews

We report the results for the main topics that were discussed in the interviews, which referred to strategies used to ensure that self-assessments resulted in targeted quality improvements, obstacles encountered with the role of the mentor, and benefits observed.

Table 1 Mentors' opinions before ($n = 27$) and after ($n = 28$) the assessments

	Strongly disagree, n (%)	Disagree, n (%)	Neutral, n (%)	Agree, n (%)	Strongly agree, n (%)
Perceptions prior to the assessments					
I understand the goals of the portfolio	0 (0%)	0 (0%)	1 (4%)	22 (81%)	4 (15%)
I feel competent to explain the goals of the assessment to others	0 (0%)	0 (0%)	1 (4%)	23 (85%)	3 (11%)
I feel well prepared to conduct the assessments	0 (0%)	2 (7%)	13 (48%)	11 (41%)	1 (4%)
I learned a lot during the training for mentors	0 (0%)	0 (0%)	4 (15%)	20 (74%)	3 (11%)
I feel competent to manage difficult cases	0 (0%)	1 (4%)	16 (59%)	10 (37%)	0 (0%)
I am looking forward to performing the assessments	0 (0%)	0 (0%)	2 (7%)	21 (78%)	4 (15%)
Perceptions after the assessments					
I learned a lot from performing the assessment interviews	0 (0%)	1 (4%)	9 (32%)	17 (60%)	1 (4%)
I am satisfied with the way I performed the assessment	0 (0%)	2 (7%)	11 (39%)	12 (43%)	3 (11%)
I am willing to continue in my appointment as a mentor in the future	0 (0%)	1 (4%)	2 (7%)	21 (75%)	4 (14%)
I would recommend a colleague to be a mentor	0 (0%)	2 (7%)	4 (14%)	21 (75%)	1 (4%)
I found the time that I needed to invest for the whole project acceptable	2 (7%)	8 (29%)	10 (36%)	8 (29%)	0 (0%)
I find the time and cost investments are worth the effort considering doctors' benefits	0 (0%)	1 (4%)	9 (32%)	12 (43%)	6 (21%)
I believe that the performance assessments contribute to the professional development of doctors	0 (0%)	0 (0%)	9 (32%)	15 (54%)	4 (14%)

Unless indicated otherwise, each figure in the table indicates the percentage of mentors who chose the corresponding response category.

Strategies used

Contrasting and collating information

Mentors indicated they collated the doctors' self-assessments in their portfolios with the external feedback from the 360-degree procedure to prepare for the assessment interviews. They looked for similar or contrasting information. In the assessment interviews with the doctors, mentors tried to encourage recognition of the feedback received by the doctor. They did so by confronting the doctor with the similarities or discrepancies between his or her self-assessment and the 360-degree feedback or by simply asking the doctor whether he or she recognised the feedback:

'I did it [gave negative feedback] by looking for similarities. In that case the portfolio was very helpful. I [would] say, for example: "Yes, you are busy, others can see that too, and they have suggestions how you might improve by doing that or that."' (Mentor 7)

Posing 'reflective' questions

Mentors explained their role as similar to 'providing a mirror' by emphasising discordance of information and encouraging doctors to think about it themselves. Mentors mentioned that they attempted to ask open questions – especially 'why' questions – and to let doctors draw their own conclusions to encourage reflection:

'Well, by not drawing all sorts of conclusions yourself, but by asking the person who is being evaluated, what they think. "Does it ring a bell?" or "Why do you think that is?"' (Mentor 5)

Goal setting

Mentors reported that they believed it was their responsibility to ensure that concrete and achievable goals were set. Mentors emphasised that they purported to encourage the formulation of achievable goals and to avoid providing simple solutions. In order to achieve this, mentors indicated that they asked consistently about not only what doctors wanted to change, but especially about how they wanted to change (i.e. by asking the 'how question' instead of the 'what question'):

'If people say, "Yes I should work on this," then I ask not only what they are going to improve but also how. "What exactly are you going to do about this?"' (Mentor 9)

Perceived obstacles

The survey data revealed mixed feelings with regard to mentors' preparedness for and satisfaction with their own performance. In the interviews, some mentors explained this was because they had encountered some obstacles. These obstacles were related to familiarity with the doctor they were assessing and the acquiring of new interview skills.

Familiarity with the doctor assessed

Mentors were unanimous in the notion that neutrality was crucial for a good collegial assessment interview. According to the mentors, a certain distance is necessary to encourage reflection and to prevent the assessment interview becoming a 'cosy chat'. In the eyes of mentors, there exists a potential tension between neutrality and familiarity with the doctor evaluated. According to mentors, it is difficult to disregard their own views of the doctor evaluated, which compromises the neutrality of the assessment interview. They mentioned that, prior to the assessment, they tried to consciously erase their image of their colleague's performance:

'You have to be very objective and honest about the information you get, but well, when you have known someone for several years and you see how they work and it is in line with what you think, then it is hard to avoid this prior knowledge completely.' (Mentor 2)

Furthermore, several mentors recognised that familiarity with the doctor who is being evaluated can make the delivery of negative 360-degree feedback difficult for the mentor. In the eyes of some mentors, negative feedback can lead to a perception of the mentor as a harbinger of bad news. As a result, some of the mentors believed that relationships could be influenced because of anxiety about the breaching of confidence and failure to distinguish between the content of the feedback and the messenger:

'As a messenger, you may have to present results that not only are unpleasant for the person concerned, but can also damage your relationship with that person. Obviously, that is not what you want.' (Mentor 1)

This perception was not universally shared by the mentors:

'No, I don't find [delivering negative feedback] difficult because it is not my task to judge someone.'

At least that's how I see this role, I am here as a mentor for someone who is looking at himself.' (Mentor 9)

Interview skills

Mentors indicated some difficulties in developing some of the interview skills necessary for carrying out performance assessments. Firstly, mentors noticed that some doctors tend to consider only their weaknesses and that it is therefore necessary for the mentor to explicitly mention strengths before dealing with weaknesses. However, in their experience, it was difficult to do this.

Secondly, some mentors observed that the practice of active listening and enabling doctors to find their own solutions is difficult. They argued that this is difficult for them because in many clinical settings they tend to intervene and offer concrete solutions:

'It is quite complicated to stick to the rules because in a conversation, for instance, you easily tend to relate to what someone is telling you, for example by saying: "That's exactly what happens to me in clinic and you might try doing this or that about it."' (Mentor 2)

Benefits for mentors and organisations

A majority of mentors reported in the survey that they wanted to continue their appointment although the amount of time they had been required to invest had been great. In the interviews, participants spoke in greater detail about their satisfaction and argued that they themselves benefited from the assessments in two ways. Firstly, they acquired new interview skills that they could apply in their daily work. Secondly, they learned from the problems that assessee doctors had dealt with, which gave them insights into how to deal with similar situations.

Moreover, mentors were aware of concurrent benefits to the organisation. Most mentors believed assessments contribute to the development of a better working atmosphere in hospitals. They argued that because they try to have an objective position, their prejudices about their colleague doctors disappear. Additionally, they noted that because they are better informed about what their colleagues think and do, solidarity and mutual respect increase:

'I am also convinced that if this was done for all members of staff, in-house relations would benefit from it. I have noticed that because you have to

remain objective, your prejudices, for example, towards a certain radiologist disappear. And the doctor gets to know the mentor as a person facilitating a conversation who does not judge.' (Mentor 9)

DISCUSSION

To our knowledge, this is the first study to explore in greater detail the role of the mentor in performance assessments. In an earlier study, we found that a mentor is vital to the success of performance assessments.¹⁹ A major point of agreement between mentors and doctors concerns the importance of reflection and goal setting in the use of 360-degree feedback. Our current study provides some gain in depth of insight related to strategies mentors can use to increase the chance that a doctor will internalise an external assessment. Interviews revealed that mentors used several strategies to encourage reflection. Strategies included: contrasting and collating information; posing reflective questions, and goal setting. Mentors' perspectives in this study showed similarities with recent findings in the literature based on theoretical discourse. Mentors explained how they 'contrast and collate information' to emphasise discordance of information. Many researchers have underscored the importance of creating an 'aha moment' that integrates high-quality external and internal data as a catalyst for meaningful reflection and change.^{3,22} Further, the reflective questions posed by facilitators rely on theoretical assumptions about how one can nurture the concept of 'self-directed assessment seeking', which refers to the process by which doctors take responsibility for looking outward, seeking feedback and information from external sources and using these data to direct performance improvement.² The fact that the strategies chosen by mentors to deliver feedback were not discussed in the training for mentors adds to the evidence base for those strategies because mentors reported that they had discovered these strategies by trial and error. Most mentors did not use these strategies in the first assessment interviews and a reasonable proportion of mentors were dissatisfied with their own performance.

A majority of mentors indicated in the survey that they wanted to continue in their mentorship. Mentors explained this was partly because they and their organisations also benefited from the practice.

The finding in our study that some mentors expressed giving (negative) feedback as a burden and

were afraid it would aggravate intercollegial relationships is of particular interest in the light of perceived benefits for the organisation. The potential burden of providing feedback to a colleague was underlined in earlier studies amongst appraisers in the UK, who expressed their enthusiasm, but stressed the fact that emotional difficulties and tension exist.^{16,23,24} These conflicting perceptions highlight how important it is that mentors acquire skills in giving feedback while maintaining clear procedures with regard to familiarity and confidentiality.

Strengths and weaknesses

There are some limitations to this study. Because of its explorative nature and the limited number of mentors involved, the generalisability of our findings may be limited. Secondly, the study sample was too small to evaluate the validity and reliability of the survey questionnaires thoroughly. Thirdly, the mentors and doctors involved were volunteers. Nevertheless, we believe our findings have a broader meaning as we included mentors from multiple institutions and disciplines and we continued interviewing until saturation had been achieved. To our knowledge, this is the first study to demonstrate a theoretical underpinning of what mentors can do to increase the chance that external assessments such as 360-degree feedback are utilised, which represents a highly relevant and so far underexplored area.^{25,26}

Conclusions and recommendations

Before appointing a mentor, four issues and conditions should be considered. Firstly, the fact that some mentors had problems with delivering (negative) feedback as well as with interview skills (e.g. active listening) might be related to their own lack of experience in conducting formative assessments as well as the fact that the training did not focus on practising these skills. This lack of experience should be addressed by improved training in which mentors exercise these three strategies. Mentoring strategies formatted as questions that may be of help in the assessment interviews are listed below.

Collating and contrasting information

- Which differences and similarities do you recognise between your self-assessment and the assessments by others?
- Do you recognise a pattern between the assessments?

Posing reflective questions

- Why do you think others give you this feedback?
- When do these things happen?

Goal setting

- What do you want to achieve?
- How do you want to pursue this goal?

Secondly, matching mentors with doctors with whom they do not have a personal or intensive working relationship is also recommended to prevent awkward situations arising as a result of familiarity. Thirdly, opportunities for interaction among mentors should be created to give them the possibility to talk about difficulties in giving (negative) feedback and the assessments in general. Fourthly, incentives for mentors should be considered in order to compensate for their outlay of time and energy and to encourage the building of a high-quality mentoring system.

As for research, there are a series of unanswered questions. Further investigations are needed to establish whether doctors truly internalise external assessments and whether this results in performance improvement. Future studies could investigate whether suggestions for improvements presented in 360-degree feedback result in adequate improvement plans. Secondly, the influence of a mentor on the discrepancy between self-assessment and external assessment also deserves further study.

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REFERENCES

- 1 Hays RB, Davies HA, Beard JD, Caldon LJ, Farmer EA, Finucane PM, McCrorie P, Newble DI, Schuwirth LW, Sibbald GR. Selecting performance assessment methods for experienced doctors. *Med Educ* 2002;**36**:910–7.
- 2 Eva KW, Regehr G. ‘I’ll never play professional football’ and other fallacies of self-assessment. *J Contin Educ Health Prof* 2008;**28**:14–9.
- 3 Epstein RM, Siegel DJ, Silberman J. Self-monitoring in clinical practice: a challenge for medical educators. *J Contin Educ Health Prof* 2008;**28**:5–13.
- 4 Hodges B, Regehr G, Martin D. Difficulties in recognising one’s own incompetence: novice doctors who are unskilled and unaware of it. *Acad Med* 2001;**76**(Suppl 10):87–9.
- 5 Davis DA, Mazmanian PE, Fordis M, Van Harrison R, Thorpe KE, Perrier L. Accuracy of doctor self-assessment compared with observed measures of competence – a systematic review. *JAMA* 2006;**296**:1094–102.
- 6 Lockyer JM, Violato C. An examination of the appropriateness of using a common peer assessment instrument to assess doctor skills across specialties. *Acad Med* 2004;**79**(Suppl 10):5–8.
- 7 Teleki SS, Shaw R, Damberg CL, McGlynn EA. *Providing Performance Feedback to Individual Doctors: Current Practice and Emerging Lessons*. RAND Health. [Working Paper.] 2006. http://www.rand.org/pubs/working_papers/WR381/. [Accessed 11 December 2008.]
- 8 Lockyer J, Violato C, Fidler H. Likelihood of change: a study assessing surgeon use of multi-source feedback data. *Teach Learn Med* 2003;**15**:168–74.
- 9 Lockyer JM, Violato C, Fidler HM. What multi-source feedback factors influence doctor self-assessments? A 5-year longitudinal study. *Acad Med* 2007;**82** (Suppl 10):77–80.
- 10 Sargeant J, Mann K, Sinclair D, Ferrier S, Muirhead P, Van der Vleuten C, Metsemakers J. Learning in practice: experiences and perceptions of high-scoring doctors. *Acad Med* 2006;**81**:655–60.
- 11 Sargeant J, Mann K, Sinclair D, van der Vleuten C, Metsemakers J. Understanding the influence of emotions and reflection upon multi-source feedback acceptance and use. *Adv Health Sci Educ Theory Pract* 2008;**13**:275–88.
- 12 Seifert CF, Yukl G, McDonald RA. Effects of multi-source feedback and a feedback facilitator on the influence of behaviour of managers toward subordinates. *J Appl Psychol* 2003;**88**:561–9.
- 13 Luthans F, Peterson SJ. 360-degree feedback with systematic coaching: empirical analysis suggests a winning combination. *Hum Resour Manage* 2003;**42**:243–56.
- 14 Connor MP, Bynoe AG, Redfern N, Pokora J, Clarke J. Developing senior doctors as mentors: a form of continuing professional development. Report of an initiative to develop a network of senior doctors as mentors: 1994–1999. *Med Educ* 2000;**34**:747–53.
- 15 Driessen E, van Tartwijk TJ, Dornan T. The self-critical doctor: helping students become more reflective. *BMJ* 2008;**336**:827–30.
- 16 Lewis M, Elwyn G, Wood F. Appraisal of family doctors: an evaluation study. *Br J Gen Pract* 2003;**53**:454–60.
- 17 Blank LL, Cohen JJ. Feedback improves performance: validating a first principle. *Arch Pediatr Adolesc Med* 2007;**161**:103–4.
- 18 Overeem K, Lombarts MJMH, Arah OA, Klazinga NS, Grol RPTM, Wollersheim HC. Three methods of multi-source feedback compared. A plea for narrative comments and co-workers’ perspectives. *Med Teach* 2009; In press.
- 19 Miles MB, Huberman M. *Qualitative Data Analysis: an Expanded Source Book*, 2nd edn. Thousand Oaks, CA: Sage Publications 1994;172–245.
- 20 Lincoln YS, Guba G. *Naturalistic Inquiry*. Newbury Park, CA: Sage Publications 1985;357–82.
- 21 Overeem K, Wollersheim HC, Driessen E, Lombarts K, Van de Ven G, Grol R, Arah OA. Doctors’ perceptions of why 360-degree feedback does (not) work: a qualitative study. *Med Educ* 2009;**43**:874–82.
- 22 Galbraith RM, Hawkins RE, Holmboe ES. Making self-assessment more effective. *J Contin Educ Health Prof* 2008;**28**:20–4.
- 23 McKinstry B, Peacock H, Shaw J. GP experiences of partner and external peer appraisal: a qualitative study. *Br J Gen Pract* 2005;**55**:539–43.
- 24 McKay J, Shepherd A, Bowie P, Lough M. Acceptability and educational impact of a peer feedback model for significant event analysis. *Med Educ* 2008;**42**:1210–7.
- 25 Violato C, Lockyer JM, Fidler H. Changes in performance: a 5-year longitudinal study of participants in a multi-source feedback programme. *Med Educ* 2008;**42**:1007–13.
- 26 Sargeant J, Mann K, van der Vleuten C, Metsemakers J. Directed self-assessment: practice and feedback within a social context. *J Contin Educ Health Prof* 2008;**28**:47–54.

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