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How feedback can foster professional growth of teachers in the clinical workplace: A review of the literature

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ABSTRACT

Student ratings of teaching have received much attention in both higher and medical education research. Paramount has been the attention to the robustness of the instruments used to capture these ratings as a source of feedback for teachers. However evidence is scarce with regard to what happens after ratings are fed back to the teachers. This paper will focus on feedback facilitation strategies needed for medical teachers in the workplace setting to improve their teaching. First, the attributes of clinical teaching will be introduced, followed by a disquisition on feedback uptake, and finally reflection as a tool to improve teaching. Second, several recently published strategies aimed at improving clinical teaching through the facilitation of feedback are discussed.

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Background

Assuring and enhancing the quality of teaching is a major concern to higher education institutions worldwide. Quality assurance efforts in higher education, largely focused on accounting for teaching quality, have shifted towards a focus on improving teaching quality (Harvey & Newton, 2004). How does one handle the improvement of teaching quality when a (large) part of the curriculum consists of internships situated in the workplace? How can employees who have not been formally trained to be supervisors and teachers be supported to take on this important role? These are questions which are pertinent to medical curricula worldwide. Due to the important role of clerkships (clinical rotations through various hospital departments aimed at further developing clinical reasoning, physical examination and inter professional collaboration skills) in the medical curriculum, physicians working in the hospital perform a supervisory and/or teaching role in addition to clinical duties. Given this special

setting which is aimed at patient care and not student learning, specific strategies are required to improve the quality of supervision and teaching by clinicians (Dolmans, Wolphagen, & Scherpbier, 2003; Stalmeijer, Dolmans, Wolphagen, & Scherpbier, 2009; Van Berkel, 2010).

This paper presents an overview of the literature that has described efforts to provide effective feedback based on student ratings to teachers in workplace settings and the principles by which they aim to do this. Firstly, we will provide a general overview of the issues within the clinical workplace which make support and training of clinicians in their teacher's role pertinent. Secondly, we will elaborate on the trend within medical education to develop student rating instruments to provide feedback to these 'clinical teachers'. Thirdly, we will focus on the potential limitations and pitfalls within this process. Finally we will discuss several strategies to optimize evaluation and feedback of clinical teachers as a way to improve teaching quality in the clinical workplace.

Methods

This paper is based on comprehensive searches for research literature which was performed as part of two dissertations aimed at faculty development and quality assurance within the clinical workplace (Boerboom, 2011; Stalmeijer, 2011). In addition to these

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literature searches an additional, specific search was conducted for studies describing feedback for the purpose of faculty development. Only studies published in peer reviewed scientific journals were included. The included studies were read, using a reading list that reflected the purpose of this paper: to provide an insight in how to provide effective feedback to teachers in a medical workplace setting. The current paper is a synthesis of this literature.

The challenges of teaching in the workplace

All internships are complicated by the fact that the setting which serves as the learning environment (the workplace) is first and foremost meant for working and production and not student learning (Spencer, 2003). Given the importance of learning in the workplace in the process of becoming a medical doctor, the field of medical education has paid a lot of attention to (1) defining characteristics of good clinical teachers (Dolmans, Wolfhagen, Gerver, de Grave, & Scherpbier, 2004; Irby, 1994; Irby & Bowen, 2004; Kilminster & Jolly, 2000; Snell et al., 2000; Ullian, Bland, & Simpson, 1994), (2) ways to train clinicians to become good clinical teachers (Irby, 1995; McLean, Cilliers, & Van Wyk, 2008; Neher, Gordon, Meyer, & Stevens, 1992; Ramani & Leinster, 2008) and (3) ways to evaluate clinicians as clinical teachers (Beckman, Ghosh, Cook, Erwin, & Mandrekar, 2004; Fluit, Bolhuis, Grol, Laan, & Wensing, 2010). The fact that the dynamic tensions within and the demands of the workplace complicate effective teaching contribute to the need of these endeavours. Dornan, Boshuizen, King, and Scherpbier (2007) have stated that the core condition for workplace learning is 'supported participation', i.e. the medical doctors who have a role as educators in the clinical workplace, help students participate in patient care by being both supportive and challenging. The medical education domain provides a rich context from which to draw examples of how feedback might stimulate the professional growth of teachers in the workplace.

We will first elaborate on the various procedures and instruments developed to use evaluation and feedback as a way to train clinicians as teachers.

Evaluation as a faculty development initiative

To support clinical teachers in the performance of their teaching roles in the clinical workplace faculty development has gained increasing prominence in medical education (Prideaux et al., 2000; Steinert, 2005; Steinert et al., 2006). To promote excellence in clinical teaching, providing feedback on supervisory skills of clinical teachers has become an important part of faculty development (Ramani, 2006). Although faculty developers have an important role in providing this feedback (McLean et al., 2008), student feedback, of which (numeric) ratings are an important part, is in many cases the main source of information about the quality of the teaching of individual clinical teachers (Beckman et al., 2004; Fluit et al., 2010; Irby, Ramsey, Gillmore, & Schaad, 1991; McOwen, Bellini, Guerra, & Shea, 2007). There is compelling evidence that student ratings can provide valid and reliable feedback (Marsh & Roche, 1997). Student ratings as part of faculty development initiatives can assist teachers to identify areas for improvement, stimulate teachers to reflect on their teaching practice and stimulate the making of a strong commitment to change (Boerboom, Jaarsma, et al., 2011; Van der Leeuw, Slootweg, Heineman, & Lombarts, 2013).

Why feedback matters

What is the evidence for feedback in relation to faculty development within the workplace setting? Feedback plays a

central role in supporting cognitive, technical and professional development (Archer, 2010). Authors agree that in order to improve professional performance, one should first know how he/she is doing and what can be done better through receiving feedback (Davis et al., 2006; Krackov & Pohl, 2011; Mann et al., 2011). Valid and reliable information about one's performance is necessary as people are known to have difficulties in reliably self-assessing their performance (Eva & Regehr, 2007; Mann et al., 2011). In the context of medical education, feedback can help to generate standards for teaching, preferably based on a theoretical foundation of effective (clinical) teaching (Biggs, 2001). Feedback is also recognized to stimulate the work engagement of professionals (Bakker & Demerouti, 2008). This is especially true when job demands are high, like in the context of clinical teaching (Bakker & Demerouti, 2008; Spencer, 2003). Engaged professionals are more effective, more productive and more creative.

Instruments providing and structuring feedback

Instruments for providing clinical teachers with feedback on their supervisory skills have received a great deal of attention in the literature and many studies have reported on the robustness and validity of instruments using student ratings for providing feedback to clinical teachers (Beckman et al., 2004; Fluit et al., 2010; Snell et al., 2000). In most cases these instruments are composed using input from stakeholders, which is favourable because stakeholder involvement will not only enhance the content validity of the instrument in question, it will also enlist support for its use (Bowden & Marton, 1998). In many studies though, the effectiveness of the evaluation and the feedback on the clinical teachers (and their context) remain underexposed (American Education Research Association and American Psychological Association, 1999; Fluit et al., 2010). This is regrettable because information about the reactions of clinical teachers after receiving feedback from student ratings and the effect of this feedback on teaching effectiveness can add substantially to the validity of these instruments (Beckman, Cook, & Mandrekar, 2005).

The limitations of evaluations as a faculty development initiative

Using evaluations for enhancing teaching has certain limitations. These limitations may be due to the instrument itself, but also due to the response of the recipient to feedback.

Limitations: not using theory to guide instrument development

As stated above, the majority of instruments for evaluating clinical teaching are based on the input of stakeholders (Bowden & Marton, 1998; Fluit et al., 2010). However, in many cases, the theoretical dimensions underlying the compositions of these instruments are not made explicit (Dolmans et al., 2004; Stalmeijer, Dolmans, Wolfhagen, Muijtjens, & Scherpbier, 2008). For evaluation results to be helpful to clinical teachers in optimizing their teaching practice, the evaluation instrument should have a solid theoretical foundation which in turn should resonate with the espoused theory of learning and teaching of the institute (Biggs, 2001). When evaluation feedback is not underpinned by these theories of effective teaching, it is difficult to establish in which direction efforts to improve teaching practice should be headed and, consequently, real improvement will likely not occur (Bowden & Marton, 1998), i.e. the teacher will just receive some tips and tricks and will not be stimulated to actually reflect on his or her teaching behaviours (Biggs, 2001).

Limitations: instrument does not provide rich feedback

Another problem arises when the instrument does not provide rich and narrative feedback. Most student rating instruments used for providing feedback to clinical teachers rely on scaled items (Fluit et al., 2010). However, receivers of feedback perceive narrative comments as more valuable than numeric information alone (Burford, Illing, Kergon, Morrow, & Livingston, 2010; Van der Vleuten, Schuwirth, Scheele, Driessen, & Hodges, 2010). The use of open questions is recommended, as narrative comments have proven to be a rich and useful source of feedback in addition to the numerical feedback from scaled items (Overeem et al., 2010; Van Es, Visser, & Wieringa-de Waard, 2012). Evidence from both human resource management and medical education literature has demonstrated the importance of rich written narrative feedback in the development of professional performance (Brutus, 2010; Ferguson, Wakeling, & Bowie, 2014; Govaerts, van der Vleuten, Schuwirth, & Muijtjens, 2005). In addition to narrative feedback, the degree of specificity of questionnaire items also influences the usefulness for change (Sargeant, Mann, Sinclair, Van der Vleuten, & Metsemakers, 2007).

Limitations: the recipient of the feedback

A recent study of Van Roermund et al. (2013) stressed that the effects of feedback depends foremost on the teacher receiving the feedback. Van Roermund et al. demonstrated that acceptance of feedback is influenced by factors like self-efficacy, personal beliefs, attribution, reflection on one's abilities and attitude towards improvement.

Several authors have concluded that merely reading a feedback report based on student ratings does not automatically stimulate teachers to reflect on and find ways to improve their teaching practices (Atwater, Waldman, & Brett, 2002; Seifert, Yukl, & McDonald, 2003; Smither, London, & Reilly, 2005). There is evidence that not facilitating feedback through dialogue can even raise barriers to reflection and behavioural change, due to, for example, emotional reactions like denial or defensiveness (DeNisi & Kluger, 2000; Overeem et al., 2009; Sargeant, Mann, Sinclair, Van der Vleuten, & Metsemakers, 2008). This especially holds for contexts like the clinical setting where teaching is not considered the most important task. Although there is a global recognition that feedback is essential for improvement, its effect on performance has been found to vary (Kluger & DeNisi, 1996). Others also stated that little is known about the ways in which clinical teachers actually respond to feedback (Eva et al., 2012; Kluger & DeNisi, 1996; Sargeant et al., 2008).

Moving beyond limitations: importance of self-assessment, reflection and feedback facilitation

Feedback of evaluation ratings to clinical teachers is only useful when it stimulates reflection and improves teaching effectiveness (Morrison, 2003; Snell et al., 2000). Van der Leeuw et al. (2013) identified a trans-theoretical framework explaining how and why clinical teachers do or do not proceed to action after receiving feedback on their teaching effectiveness in the post graduate clinical curriculum. One 'tipping point towards change' occurred when clinical teachers realized that if they did not change their teaching behaviours, they or their students could experience negative emotions. Another important prompt for change was realizing that there actually was a problem concerning their teaching and something should be done with or without support from others. This was enhanced when the clinical teacher decided to make a strong commitment to change. Additional tipping points were reached when clinical teachers recognized the benefits of

change and felt confident to do something with the feedback. These prompts for changes require several steps of critical reflection (Korthagen & Vasalos, 2005).

Self-assessment, a process in which teachers use feedback to interpret their individual teaching performance by comparing it to an explicit standard, is recognized as a first step for reflection (Epstein, Siegel, & Silberman, 2008). The importance of reflection for enhancing professional growth in teaching has been endorsed by many authors (Hatton & Smith, 1995; Korthagen & Vasalos, 2005; Tigelaar, Dolmans, de Grave, Wolhagen, & van der Vleuten, 2006; Ward & McCotter, 2004; Watts & Lawson, 2009). Feedback is crucial in the process of self-assessment as it can be used to identify areas for improvement, guide behavioural change and actually improve performance (Eva & Regehr, 2008; Smith & Walsh, 2003).

In our opinion it is necessary to facilitate teachers' acceptance of feedback and to help them finding their tipping point. Reasons (e.g. negative emotions) that can impede reflection should be prevented and clinical teachers should be assisted in translating feedback into concrete plans of action through careful reflection (DeNisi & Kluger, 2000; Ferguson et al., 2014; Overeem et al., 2009; Sargeant et al., 2008). This kind of assistance is called "feedback facilitation" (Seifert et al., 2003; Smither et al., 2005). According to the literature (Boerboom, Jaarsma, et al., 2011; DeNisi & Kluger, 2000; Ferguson et al., 2014; Fluit, Bolhuis, et al., 2013; Fluit, Feskens, et al., 2013; Overeem et al., 2009; Sargeant et al., 2008; Stalmeijer et al., 2009; Yardley, Teunissen, & Dornan, 2012) feedback facilitation should have the following objectives:

Assisting the clinical teacher...

- ...to overcome negative emotions caused by the feedback;
- ...with interpreting the feedback (report);
- ...to engage in critical and constructive reflection;
- ...to define (learning) goals and develop concrete plans to put the feedback into action.

Feedback facilitation can take many forms such as assisted self-assessments, discussing feedback with a facilitator/coach, consultation and peer meetings (Boerboom, Jaarsma, et al., 2011; Fluit, Bolhuis, et al., 2013; Fluit, Feskens, et al., 2013; Mcleod & Steinert, 2009; Penny & Coe, 2004; Ross & Bruce, 2007; Stalmeijer et al., 2009; Tigelaar, Dolmans, Meijer, de Grave, & van der Vleuten, 2008). All strategies have in common that they stimulate dialogue and reflection around the feedback. This can be a dialogue with students, peers, mentor or experts. Dialogue around feedback increases the chances of professional growth because it helps the teacher to share and compare the content of feedback and its relationship to professional values and standards (Lockyer et al., 2011; Van der Leeuw & Slootweg, 2013).

Evidence for feedback facilitation

In the last few years several studies on the acceptance and effects of feedback facilitation for clinical teachers have been published (Boerboom, Jaarsma, et al., 2011; Fluit, Bolhuis, et al., 2013; Fluit, Feskens, et al., 2013; Stalmeijer et al., 2009). In the following paragraphs we will discuss several facilitation strategies and their outcomes.

Evidence for self-assessment to facilitate uptake of feedback

In 2010 Stalmeijer, Dolmans, Wolhagen, Peters, et al. (2010) published a paper in which they explored whether the perceived effect of student ratings on teaching effectiveness improved when clinical teachers' self-assessment was added to feedback based on student ratings on clinical teaching in an undergraduate

medical curriculum. Student ratings and self-assessments were collected using the validated Maastricht Clinical Teaching Questionnaire (Stalmeijer, Dolmans, Wolfhagen, Peters, et al. (2010)). After the clinical teachers received written feedback which consisted of their self-assessment, student ratings and the scores of all faculty of the same department, data was collected through a questionnaire and interviews. Stalmeijer et al. found that the effect of self-assessment as a single tool was limited. Most teachers in this study appreciated the self-assessment, but commitments to change were made in only a few cases. On the other hand, the researchers did find that the self-assessment had a desired side-effect as it helped clinical teachers to understand standards for excellent clinical teaching: As the researchers used a validated instrument based on the theory of cognitive apprenticeship for the design of the self-assessment tool, they implicitly engaged faculty in a reflection on the principles of good clinical teaching (Collins, Brown, & Holum, 1991; Stalmeijer et al., 2008).

The authors found that the effect of self-assessment combined with student ratings was more promising. The clinical teachers expressed that they valued the student feedback highly, qualifying it as specific, instructive and illuminating. The study results indicated that the discrepancies between student feedback and their self-assessment were a strong incentive to make a commitment for change and for finding (educational) support (Stalmeijer, Dolmans, Wolfhagen, Peters, et al., 2010). However how the clinical teachers reflected on their feedback and if the feedback had an actual effect on their teaching behaviours was not investigated in this study.

Evidence for discussion about feedback with stakeholders to stimulate uptake of feedback

In 2013 Fluit et al. published a paper in which they studied a more extensive strategy for feedback facilitation comprising planned sessions to stimulate discussion around feedback. This strategy targeting post-graduate clinical teachers (supervisors) was a part of the ‘Evaluation For Effective Clinical Teaching System’ (EFFECT-S). This system was developed to meet the principles of effective provision of feedback and adhered to the following principles: (1) evaluation through a thoroughly validated rating instrument, (2) providing instructive feedback and (3) obtaining acceptance for the feedback. Similar to the strategy of Stalmeijer, Dolmans, Wolfhagen, Peters, et al. (2010), the EFFECT-S comprises a self-assessment exercise (the term self-evaluation is used) and a feedback report based on resident ratings. In this report the scores of all faculty of the same department are included. What makes the EFFECT-S different is that before and after the ratings are collected, both the residents and the supervisors (clinical teachers) are involved in a dialogue around the feedback. Before obtaining the resident ratings these stakeholders agreed on the selection of the respondents, the organization of the feedback procedure and who has access to the data. After an analysis (the feedback report) of the self-evaluation and the resident ratings is fed back to a supervisor, a face-to-face feedback interview with the supervisor and two participating residents is organized in which the feedback is discussed. This meeting is guided by an educationalist. By conducting semi-structured interviews with residents and supervisors the acceptance and effect of the EFFECT-S was examined.

In this strategy the comparison between the self-evaluation and the residents’ scores was valued highly. Exploring the discrepancies between these scores proved to be very useful as a preparation for the feedback interview, as this process helped the residents to raise difficult points during this meeting. In the meetings the

residents were able to focus on the most important aspects of the feedback, give additional specific comments, clarify results and propose concrete suggestions for improvement. The presence of an educationalist during the feedback interview was perceived as helpful, because in some cases mediation was necessary to stimulate constructive dialogue.

With regard to the acceptance and effectiveness of the EFFECT-S the researchers found some favourable results. The general appreciation of this feedback facilitation strategy was high. The respondents of the semi-structured interviews reported that the validated instrument helped them to understand the important aspects of clinical teaching. The study of Stalmeijer, Dolmans, Wolfhagen, Peters, et al. (2010) concurred with this result. The EFFECT system was perceived as very helpful to make supervisors aware of their own strengths and weaknesses regarding clinical teaching. The feedback interview especially helped them to formulate alternative teaching behaviours. No actual change in teaching behaviours was investigated in this study. However, it was reported that after the feedback interview the learning climate improved. The respondents suggested that organizing a follow-up team meeting would aid deeper reflection on the feedback. The supervisors felt a need for sharing their feedback and to make agreements with all faculty of the department to realize further change.

Evidence for the use of peer-reflection to stimulate uptake of feedback

In 2011 Boerboom, Jaarsma, et al. (2011) investigated the added value of a peer reflection meeting as part of a feedback facilitation strategy. Peer reflection meetings can be very instructive and supportive for teachers to improve their teaching practice (Meirink, Meijer, & Verloop, 2007; Tigelaar et al., 2008). This research involved clinical teachers in an undergraduate veterinary curriculum which has basically the same format (engagement in clinical practice) as a medical curriculum (Smith & Walsh, 2003; Spencer, 2003). In this study student ratings were obtained through a version of the Maastricht Clinical Teaching Questionnaire (MCTQ) validated for the veterinary context (Boerboom, Dolmans, et al., 2011; Boerboom et al., 2012). In contrast to the papers described above, this study evaluated and compared the acceptance and effectiveness of two feedback facilitation strategies. All clinical teachers completed a self-assessment based on the MCTQ. Subsequently they received an individual feedback report containing a comparison between their own self-assessment ratings and the student ratings including narrative feedback. One of the two groups then participated in a peer reflection meeting during which the clinical teachers were stimulated to discuss each other’s feedback. The other group did not participate in an additional intervention after receiving their feedback report. All clinical teachers in both groups were asked to complete a reflection assignment on their feedback. The effects of the strategies as perceived by the participating clinical teachers were explored by using a questionnaire. The effects of the strategies on the quality of reflection by the participants were determined in a qualitative analysis of the reflection assignment.

The clinical teachers from both groups appreciated the different steps of their feedback facilitation strategy. According to the respondents, all steps of the strategies were effective. Also in this study the researchers found that the facilitation strategy taught the clinical teachers strategies for good clinical teaching. The results of the reflection assignment demonstrated that the clinical teachers analyzed the student feedback from different perspectives and that they took into account the context of their teaching. This is considered as a deep form of reflection and therefore beneficial for professional growth (Hatton & Smith, 1995). The

majority of the clinical teachers were also able to formulate concrete plans for changing their teaching behaviours. This is an essential step when reflecting on feedback, as being able to formulate an alternative for teaching practice is related to actual improvement (Ward & McCotter, 2004).

Discussion

In the sections above, this paper offered an overview of the literature on teaching in the clinical workplace. Both the strengths and the limitations of using (student) evaluations for enhancing teaching effectiveness in the clinical workplace have been discussed. Also the acceptance and effects of several feedback facilitation strategies for optimally stimulating the improvement of teaching in this specific context were explored.

The described strategies in the last section all used a form of informed self-assessment in which the teachers used more than self-perceptions to reflect on feedback based on student ratings. The findings of these studies strongly suggest that a feedback facilitation strategy helps with the accepting of and reflection on feedback. Through consideration of the results of these studies some useful ingredients for stimulating dialogue around feedback, enhancing critical reflection and improving clinical teaching can be identified:

- Using thoroughly validated instruments that resonate with the institute's espoused educational philosophy and theories on clinical education for obtaining feedback.
- Giving ownership of the procedure and feedback to the receivers of feedback.
- Stimulating self-assessment using the student rating feedback.
- Enhancing dialogue around the feedback with students, peers and educationalists.
- Assisting the receivers of feedback with reflection on the feedback.

Despite the fact that the first experiences with these strategies look promising, evidence to ascertain whether clinical teachers actually change their teaching behaviours is still mixed (Fluit, Bolhuis, et al., 2013; Fluit, Feskens, et al., 2013). The studies discussed above did not provide evidence that the clinical teachers did actually change their teaching practices. Future research should focus on what levels changes occur and what the durability of these changes are. The challenge is to combine repeated feedback facilitation with collecting longitudinal student ratings on individual teaching performance (Marsh & Roche, 1997).

Institutes should also focus on combining feedback facilitation strategies with other faculty development initiatives. Research has pointed out that clinical teachers that attended a teacher training programme are likely to receive higher ratings on teaching performance than faculty that did not attend training (Arah, Heineman, & Lombarts, 2012). There is also evidence that training programmes for clinical teachers not only lead to self-perceived positive changes in terms of knowledge and abilities, but actually improve objective measurable skills (Junod Perron et al., 2013). The evaluation of individual clinical teachers will give rise to new faculty development needs, e.g. learning how to coach/assess clerks effectively (McLean et al., 2008). However, further studies are required to investigate which interventions besides giving feedback are needed for sustaining new attitudes and behaviours regarding supervision of students in the clinical workplace (Bowe, Lahey, Armstrong, & Kegan, 2003).

This paper was intended to provide an overview of strategies that can be used to enhance the use of feedback based on student ratings in order to improve teaching in the clinical workplace. Student ratings combined with a well-designed feedback facilitation strategy will not be a panacea for the challenges of clinical

teaching, but promises to be a valuable addition to other faculty development initiatives. As the medical curricula have the task to educate the doctors of tomorrow, faculty educators have a social responsibility to further investigate the impact of feedback facilitation on the quality of clinical teaching.

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