

Mastering the PE requires medical students to learn and integrate several psychomotor skills. There is some evidence that observing peers may facilitate acquisition of these skills. Ste-Marie et al.⁵ reviewed the literature on model observation using the lens of social-learning theory⁶ to explore how observation improves the acquisition of motor skills and subsequent sport performance. Peer observation helps because it allows the learner to build up a model that acts as an intermediary blueprint against which the learner can compare his or her own performance, making it easier to detect and correct mistakes.^{7,8} For PE skill acquisition, in a natural-learning environment, Martineau et al.³ showed that second-year medical students who had the opportunity to observe peers while learning an integrated PE performed better than students who did not have this opportunity. A second study by the same team showed that the effect of observation was enhanced when students observed a peer who performed well compared to observing a weaker performance while learning the NLE for low-back pain.⁴ Nevertheless, it was difficult to isolate the effect of peer observation in the aforementioned studies from other potentially confounding factors, one of which is feedback.

Van de Ridder et al.⁹ defined feedback in clinical education as “specific information about the comparison between a trainee’s observed performance and a standard, given with the intent to improve the trainee’s performance.” This implies that learners receive information from a teacher or from another learner on achieving task goals. Key feedback elements are comments on their actual task performance as well as suggestions on the next steps to be taken in order to raise their level of performance. When learning PE skills in groups, both feedback (from teachers and peers) and the observation of others are part of the learning process. It may be difficult in these contexts to isolate the specific effects of feedback on learning from those of observation.

Hattie and Timperley¹⁰ found that feedback had an effect size on achievement of 0.79 compared to the average effect of all instruction that contribute to schooling, which was 0.40. Feedback is expected to facilitate learning by increasing learners’ awareness of the gaps between their current level of performance and the desired one. This effect seems to depend on the type of feedback provided. Feedback providing information about the task and about how to better execute the task tends to have a more positive effect on learning than feedback based on rewards, praise, or punishment.¹⁰

However, Kluger and DeNisi,¹¹ and Kluger and Van Dijk¹² found that providing feedback does not always have the intended positive effect, because it can

threaten the learner depending on how it is given. They concluded that a more systematic approach to giving feedback could enhance learning and skill performance while protecting the learner’s self-esteem. Their findings echoed those of various authors who developed a more structured form of feedback consisting of an intermediate check of performance against expected performance criteria, accompanied by feedback on observed strengths and weaknesses as well as tips for performance improvement.^{11,13,14}

Peer feedback; however, tends to occur in a less formal fashion. Topping¹⁵ suggested that peer feedback could be seen as a formative assessment that supplements the more formal feedback of teachers. It can also be seen as an arrangement structured by a teacher or initiated by learners in order to increase performance.

One of these arrangements is peer-assisted learning (PAL) (i.e., learning support provided to junior students by senior students). While PAL studies have demonstrated that students appreciate feedback from more advanced peers,^{16,17} the influence of such feedback on skill acquisition has not yet been investigated.

The influence of peer feedback on future performance has been shown in the area of writing skills, as evidenced by higher performance subsequent to receiving comments from a student of the same level.¹⁸ In a meta-analysis of 123 studies on effective instructions for improving writing skills, Graham and Perin¹⁹ found an effect size of 0.75 for peer assistance. Does peer feedback have the positive impact on medical students? And would PE skills acquisition be influenced by peer feedback?

Norcini²⁰ is skeptical, because he assumes that peer judgments may suffer from low reliability and validity, which makes them of limited use in fostering learning. Most studies in the medical field have explored the ability of students to accurately assess peer performance, rather than focusing on the effects of peer feedback on student performance. These studies have investigated the reliability and validity of student assessments compared to a gold standard, which is the assessment conducted by teachers.^{21,22} The results of these studies carried out in various medical specialties are variable. For example, in studies on psychomotor skills with advanced medical students, 1st-year postgraduate medical residents (PGY1) overrated their peers’ performance in comparison to their teachers’ marks.²³ Obstetrics and gynecology residents underrated it,²⁴ whereas the rating was similar to that of experts for general-surgery residents.²⁵ These studies, however, do not provide evidence of the effects of peer feedback on the performance of learners.

Another potential shortcoming for any real impact of peer feedback on performance is the fact that peer feedback is not

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