https://doi.org/10.1590/1806-9282.20221086

Feedback in medical education: beyond the traditional evaluation

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FEEDBACK CONCEPT

Feedback is an information provided by an agent (teacher, colleague, relative, etc.), regarding aspects related to the performance and/or understanding of an individual[1]. The concept of feedback has been used for many years in psychology, administration, and economics. In a more recent review of 2008, feedback was conceptualized as specific information about the observed performance of the learner, comparing it to a model ("standard"), provided to improve the student's performance[2]. Learning through feedback is a complex process influenced by individual and cultural factors[3].

To deepen the theme, this article will conceptualize important aspects of feedback integrated into teaching, in order to make this tool increasingly used and improved by educators, aiming for a teaching method focused on student development.

APPLICATION OF FEEDBACK IN MEDICAL EDUCATION

In the medical education environment, a student is often insufficiently provided with feedback[4,5]. Medical educators use to believe that they provide feedback to their students, although learners report that they are rarely provided with them[2]. When feedback is given, the information contained in it is generally too vague, even neutral, limited to be considered useful[6,7]. Isolated or singular feedbacks are not enough. This practice must be developed continuously throughout the whole training in an effective way[8]. Therefore, to be powerful, there must be a learning context in which the feedback is provided[1].

Education is not only the information we incorporate into our knowledge, but also the ability to keep learning through the process of revisiting our skills[9]. The evaluation is intrinsic to the act of teaching and the possibility to expand and improve the knowledge acquired by the student[4]. Besides the traditional method of evaluation, feedback is an essential part of the education process throughout the entire course of training, in a continuous rather than punctual way, to provide information and not judgment[10]. Therefore, the development of skills and the improvement of the student's performance through interactions with their educator (instead of judge) should be the real stimulus for effective feedback[7]. This attitude represents a concern with the progress and development of the student as a person, instead of a preoccupation only with grades or scores[10].

In medical learning involving practical tasks, many of them are passive to feedback, like clinical history, discussion of clinical cases, physical examination, teamwork, and critical thinking[2]. Observations made in clinical practice do not necessarily need to be scheduled; less formal observations are frequently more valid to obtain material for providing future feedback. The many opportunities for observation and feedback that are available as part of routine clinical activities should not go unnoticed[10].

The goal of clinical training in the medical field is to accomplish expertise and ability in patient care. Without feedback, students may not become aware of some specific subject in which they should invest more time or, still, they may not know what they can already perform well, so they can repeat the positive behavior or ability later[5]. In other words, if no feedback is provided, errors happen without correction, performance does not improve, and clinical competence is achieved obscurely or even not achieved at all[10].

FEEDBACK CONTENT

The main purpose of feedback is to reduce differences between the student's current understanding/performance and the final goal. The model ("standard") to which the student is compared must be clearly exposed[8]. This model can be based on protocols where performance is described, the previous performance of the learner himself, or the opinions of teachers about standard performance[2]. Effective feedback should answer the following three questions[1]:

Where am I going? (What the objectives are.)

How am I doing? (What progress is being made towards the goal.)

What are the next steps? (What needs to be done to achieve more progress.)

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Conflicts of interest: the authors declare there is no conflict of interest. Funding: none.
Received on September 15, 2022. Accepted on September 30, 2022.

Ideally, feedback should be initiated by asking about the student's goals and what he/she expects to receive through this interaction[11]. It is also important to initially reinforce the good practices of the student because this promotes self-confidence. Another way to involve the student more in the dialog is to question their perception of their performance; from this starting point, the feedback may contain the positive aspects of the student's performance, followed by what must be improved[5,11].

As the ultimate goal is to establish real improvements, feedback that only points out the flaws is not enough. Therefore, practical examples and suggestions should be provided. It also helps to listen to the student's plan for reworking the task in the future, that is, what he would do differently in the same activity[12]. An objective action plan can be elaborated, with necessary points to improve, scheduling a follow-up to check the progress achieved[5]. The more the student is involved in planning their learning goals, the greater the chance of improvement[13].

A teaching environment where the feedback culture is not well established leads students to draw their own conclusions and, sometimes, to give disproportionate importance to certain reactions of their teachers. As it was well exemplified in a pioneer publication about the theme by Jack Ende[10], an arched eyebrow can promote the thought "I am not performing as good as the required standard." Or, with a sudden response from a resident, one can infer that "I am really displaced in this environment"[10]. Nonverbal or verbal communication not intentionally directed to provide feedback about the student's performance is occasionally harmful; this way, the student cannot draw constructive conclusions about their evolution throughout the training.

Table 1 shows a summary of feedback considered effective or not. Feedback content is best targeted when it involves an objective problem, task, or process, but never a personal trait of the person receiving the information[1,11]. That is, feedback should be focused on behaviors that can be changed, not on the individual's personality[5].

Table 1. Feedback modalities*.

Effective	Little (or less) effective
About observable skills and abilities	About skills that are not observable
Experienced observer and/or feedback provider	Non-experienced observer and/or feedback provider
Information provided is specific	Information provided is too vague
Explicit standard models	Unclear standard models
Establishes a goal for performance improvement	No goal is established for performance improvement
Plan to observe again	No intention of observing again

*Adapted from van de Ridder et al., What is feedback in clinical education?, 2008[2].

The language used must encourage constructive criticism. Instead of using expressions like "perfect," "good," "bad," or "can improve," it may be more effective to use phrases that develop the idea, and do not just deliver unconditional praise or negative judgments. For example, "The positive aspects of your clinical exam were… and the negative ones were…" Or, "Your presentation gave us a very detailed and useful view of the problem… maybe you could also add…" Beginning the conversation by asking "What would you change or do differently" or "How do you think it went" can also open the way to reflection and have a better impact on developing ideas and action plans to achieve the determined goal[8,10]. Descriptive and nonevaluative language can bring the students closer and arouse their interest. As also well exemplified by Jack Ende in his article, statements such as "Your differential diagnosis did not include the possibility of appendicitis" may sound better than "Your elaboration of differential diagnosis is inadequate"[10]. Especially when providing negative feedback, there must be emotional distancing so that the information is better accepted[10,11].

Furthermore, when it comes to subjective aspects, which are also passive to feedback, one should be very careful and the content should be clearly expressed as subjective. In the training of difficult conversations, for example, talking "Watching this situation, I felt that you were not comfortable approaching the patient's cancer diagnosis." Putting it in another way, "You were not comfortable addressing cancer diagnosis with the patient" may suggest that this is a general perception (not only of the teacher) or even put an unsafe label on the apprentice[10].

For all types of feedback, especially the most subjective, the educator should always make sure that the message has been delivered. Encouraging the learner to paraphrase what has been said can be a useful strategy that stimulates discussion[10]. Therefore, effective feedback should be a dialog of mutual engagement, not a one-way system in delivering information[7,11]. If misunderstood, it can hurt the teacher-student relationship, making the student interpret it as a judgment of their personal value or potential, when in fact it should represent information[5].

The educator who provides feedback needs to abstain from any vanity and cannot want to be seen as a "nice" person. In other words, the educator's willingness to be well-known cannot prevent him/her from giving feedback, which is often hard. Importantly, as Adam Grant wrote in his book[9],

psychological safety for providing feedback is not a matter of relaxing standards, or giving unconditional praise; it is establishing a climate of respect, trust, and openness in which people can show themselves without fear of reprisal. It is the foundation of a learning culture[9]. The teacher's work in this situation can truly be seen as a mission, where the student is the focus, not the progress of the educator within his/her career.

Table 2 shows the desired characteristics for feedback givers and takers. The educator needs to acquire the student's trust so that they can accept and want to receive progressively more feedback[7]. The credibility of the information provided also increases when it is the educator himself who observes the tasks performed[10]. It is important that he/she is observing his/her students directly and frequently, finding a balance between supervision and student autonomy[13]. Feedback given to each person individually it is more credible than group feedback, which is usually perceived as generic and less relevant[11].

With all the guidance and content on the topic, it seems that providing feedback is like "walking on eggs"[10]. On the contrary, using precise and objective language is not as difficult as it sounds; it is only necessary training, practice, and, especially, the willingness of educators to do so.

WHERE WE CAN IMPROVE

In the traditional relationship between students and teachers, there is a tendency to consider providing feedback something that occurs "naturally" in the process, regardless of the educator's training on the topic. However, when the educator perceives himself as a learner in the evaluation process, it can promote the search for continuing education[4].

Workshops could be offered by universities for educator training and recycling. Teacher training can normalize the practice of constructive feedback by making them more acceptable to students[13]. Institutions must establish a growth-friendly learning environment and culture, increasing the frequency of feedback at all levels. Strategies that can help include creating an atmosphere that normalizes learning as a continuous process, where everyone (teachers and students) has strengths and weaknesses; stimulating the search for feedback from teachers and students; establishing long-term, trusting relationships between students and teachers; and stimulating direct observation of the student's performance[13]. There is no single recipe and no easy way to create a favorable teaching atmosphere, each institution has its particularities. But managers and educators should spend their efforts and think beyond the proposal of formal evaluation, seeking a constructive teaching mentality focused on the learning and self-development of their students.

Table 2. Qualities for effective feedback*.

Related to the student	Confident humility, resiliency, patience, knows how to listen, not in search only for appraisals, open to receive criticism, and reflects on your actions
Related to the educator	Knows how to transmit the message, knows how to listen, respectful, does not want to humiliate or intimidate, example of professionalism, empathic, and open to questioning

*Adapted from Maia et al., Adapted feedback strategy aimed at undergraduate outpatient clinics, 2018[5].

FINAL CONSIDERATIONS

I could say that this article was written under the influence of my area of expertise (endocrinology), which is full of hormonal feedback, the nature in its perfect regulatory process. But, in reality, the theme choice was motivated by a personal reflection of my learning process and its feedback models, which were much more complicated and noisier, because they depended on interpersonal relationships. With a certain maturity level now, I can see how many teaching opportunities were lost during my medical school (especially) and also during residency. Competitive environments and hidden feedback possibilities did not allow a spontaneous search for personal development, possibly involving fear of receiving a negative evaluation. I guess a good part of the students still have this behavior, because they lack the maturity to know what is necessary for their personal and professional growth, with rare exceptions. It is up to the educator to promote an appropriate environment and stimulate opportunities for the delivery of feedback, in addition to traditional evaluation. In an effort to remember the most remarkable feedback situations in my training, unfortunately, there are only few memories. There were some compliments (genuine?), almost no effectively constructive feedback, and even some catastrophic feedback attempts, which luckily did not interfere much with my professional path.

At present, in a position as a postgraduate student and with experience in preceptorship within a residency service, I can see that it is really very difficult to create favorable conditions to provide feedback. But I believe that the construction of knowledge about the theme and a movement, mainly by educators, to improve the task of performing evaluations/feedback, is the way to bring improvements in this field of the medical education process.

REFERENCES

1. Hattie J, Timperley H. The power of feedback. Rev Educ Res. 2007;77(1):81-112. https://doi.org/0.3102/003465430298487
2. Van De Ridder JMM, Stokking KM, McGaghie WC, Ten Cate OTJ. What is feedback in clinical education? Med Educ. 2008;42(2):189-97. https://doi.org/10.1111/j.1365-2923.2007.02973.x
3. Pelgrim EA, Kramer AW, Mokkink HG, Van Der Vleuten CP. Factors influencing trainers' feedback-giving behavior: a cross-sectional survey. BMC Med Educ. 2014;14(1):1-8. https://doi.org/10.1186/1472-6920-14-65
4. Zimmermann MH, Monteiro R, Foggiatto C, Gomes RZ. The teacher and the art of evaluating in medical teaching at a university in Brazil. Rev Bras Educ Med. 2019;43(3):5-15. https://doi.org/10.1590/1981-52712015v43n3RB20180167
5. Leitão Maia I, Cordeiro M, Oliveira X, Maria C, Oliveira C, Kristopherson LA. Feedback strategy adapted for university undergraduated student. Rev Bras Educ Med. 2018;42(4):29-36. https://doi.org/10.1590/1981-52712015v42n4RB20180095
6. Bing-You RG, Trowbridge RL. Why medical educators may be failing at feedback. JAMA. 2013;04102:22-3. https://doi.org/10.1001/jama.2009.1393
7. Brand PLP, Jaarsma ADC, van der Vleuten CPM. Driving lesson or driving test? A metaphor to help faculty separate feedback from assessment. Perspect Med Educ. 2020;10(1). https://doi.org/10.1007/s40037-020-00617-w
8. Thrien C, Fabry G, Härtl A, Kiessling C, Graupe T, Preusche I, et al. Feedback in medical education – a workshop report with practical examples and recommendations. GMS J Med Educ. 2020;37(5):1-19. https://doi.org/10.3205/zma001339
9. Grant A. Think again : the power of knowing what you don't know. New York (NY): Viking; 2021. p. 320.
10. Ende J. Feedback in clinical medical education. JAMA J Am Med Assoc. 1983;250(6):777-81. PMID: 6876333
11. Dai CM, Bertram K, Chahine S. Feedback credibility in healthcare education: a systematic review and synthesis. Med Sci Educ. 2021;31(2):923-33. https://doi.org/10.1007/s40670-020-01167-w
12. Zimmermann MH, Foggiatto R, Silveira M, Zanetti R. Formação continuada no ensino de ciência da saúde : avaliação de habilidades e feedback efetivo. Rev Ensino Pesqui. 2016;14(2):197-213. Available from: https://periodicos.unespar.edu.br/index.php/ensinoepesquisa/article/view/1061
13. Ramani S, Könings KD, Ginsburg S, van der Vleuten CPM. Twelve tips to promote a feedback culture with a growth mind-set: swinging the feedback pendulum from recipes to relationships. Med Teach. 2019;41(6):625-31. https://doi.org/10.1080/0142159X.2018.1432850