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## RESEARCH ARTICLE

## Faculty Development

# Harnessing student feedback to transform teachers: Role of emotions and relationships

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## Abstract

**Introduction:** Feedback is crucial to promote learning and improve performance. However, we lack a nuanced understanding of how medical teachers reflect on and internalise (or not) student feedback (SF). This study aims to fill this gap by exploring how teachers make sense of SF to improve their performance and nurture their personal and professional development.

**Methods:** In this cross-sectional qualitative study based on a constructivist paradigm, 14 medical teachers individually drew a Rich Picture (RP) of a feedback experience in which they received informal or formal feedback from students, resulting in a personal or professional change. After the drawing, we interviewed the participants to deepen our understanding of teachers' experiences. We analysed the drawings and interview transcripts using an iterative process of thematic analysis.

**Results:** SF that culminated in personal or professional change is a highly emotional experience for teachers, often with long-lasting consequences. It may threaten or reassure their self-concept and professional identity, generating feedback avoidance or feedback-seeking behaviour. SF is particularly powerful in transforming teaching practices when teachers feel connected to students through an honest and constructive relationship. Remarkably, some teachers intentionally build relationships with certain (selected) students to get 'qualified' feedback. SF acceptance also increases when teachers are open to receiving feedback and there is an institutional culture that values feedback. Finally, medical teachers believe that formal (planned) feedback is relevant to improve the curriculum, while informal (spontaneous) feedback is important for promoting teachers' personal and professional development.

**Discussion:** SF has the potential to become a transformative learning experience for teachers. The student-teacher relationship and teachers' emotional reactions affect the way teachers make sense of and internalise SF and enact behavioural change. Understanding the complexity surrounding SF is vital for supporting teachers in seizing opportunities for growth and in nurturing a meaningful relationship with the act of teaching.

## 1 | INTRODUCTION

Feedback is crucial for learning and improving performance and nurturing personal and professional development.<sup>1-4</sup> Medical education

research has focused on how students receive teachers' feedback and what makes this feedback effective.<sup>1,4-6</sup> However, we believe that a nuanced understanding of how medical teachers reflect on and incorporate (or not) student feedback (SF) is lacking.<sup>5</sup> In this study, we

explored how medical teachers (clinical and non-clinical) experienced feedback from students (SF) and how this experience influenced their personal and professional development. A deeper understanding of how teachers deal with and make sense of SF may inform the design of strategies to optimise SF, nurture meaningful student–teacher relationships and, ultimately, improve teachers' personal and professional development and performance.

Paulo Freire, the Brazilian educationalist who ignited the movement called Critical Pedagogy, conceptualised the learning process as a situated democratic dialogue that should transform not only the reality of the student but also the practice of the teacher.<sup>7</sup> According to Paulo Freire, 'whoever teaches learns in the act of teaching, and whoever learns teaches in the act of learning.'<sup>7</sup> Teachers' openness to be affected by students' experiences, reality and knowledge, nurtures an attitude Freire called 'epistemological curiosity', a 'restless questioning' combined with a capacity of 'self-criticism' towards adopting a progressive educational practice that is 'critical, bold and adventurous'.<sup>7</sup> Teachers' openness also serves as a model for students, exemplifying how students can develop their capacity for self-criticism and growth.<sup>7</sup> We believe that cultivating this epistemological curiosity depends, in part, on teachers succeeding in gathering and reflecting on students' feedback.

Ajjawi and Regehr defined feedback as 'a dynamic and co-constructive interaction in the context of a safe and mutually respectful relationship for the purpose of challenging a learner's (and educator's) ways of thinking, acting or being, to support growth'.<sup>8</sup> Feedback is an intricate communication process, and at least three dimensions influence its outcome: content, process and context.<sup>1,5,9,10</sup> Constructive elements of feedback content are as follows: reinforcing what was done well, identifying the zone of proximal development, being specific and agreeing on an actionable goal.<sup>1,9,11</sup> Important elements of the feedback process are as follows: ensuring protected time, inviting self-reflection and establishing a horizontal and democratic dialogue.<sup>1,5,7</sup> Contextual factors such as source credibility, professional culture and timing also impact feedback outcome.<sup>1,5,9,10</sup> The emotional responses evoked by the feedback and the quality of the sender–receiver relationship are particularly powerful in modulation its credibility and acceptance.<sup>1,5,8,10</sup>

According to Immordino-Yang, 'the complex intellectual and social emotions are the subjective behavioural and mental reactions we have to situations and concepts of all sorts - reactions that play out in the body (e.g., through a racing heart) and in the mind through characteristic ways of thinking (e.g., searching for an escape route during fear, moving to help another person during compassion, or narrowing our attentional focus when we find something interesting)'.<sup>12</sup> Emotions are relevant for us to adapt to both the physical and social realms.<sup>13</sup> They help us make sense of our context by modulating our focus, attention and reasoning process.<sup>13</sup> As receiving feedback is a charged social interaction, often impacting our self-concept and the way we are perceived by others, with personal and professional consequences, it may trigger diverse and intense emotional reactions.<sup>14</sup> Therefore, emotions may modulate the learning process by affecting how the feedback will be perceived, reflected on and internalised (or not).<sup>1,14</sup>

In addition to the emotional reaction evoked by the feedback, the relationship between the feedback giver and receiver may play a significant role on feedback outcomes.<sup>5,10</sup> For instance, in the context of clinical interactions, the relationship with the supervisor influences how students perceive feedback quality and credibility.<sup>15</sup> The relationship with supervisors may also nurture or hamper students' feedback seeking behaviour.<sup>10</sup> These contextual factors contribute to the complexity of feedback as a learning process.

Although this complexity was extensively mapped in the context of teachers giving feedback to students, we still need to understand how this complexity affects teachers' openness to student feedback. In one of the few studies on the topic, Robins et al. anticipated that clinical teachers' acceptance of formal (planned) feedback depends on the student who provides the feedback, the feedback content, the tone of the feedback and the reason for giving the feedback.<sup>16</sup> However, how teachers internalise SF, what the long-term impact of SF on teachers' personal and professional development might be and how (intersections of) contextual elements influence SF outcomes still need further exploration. In-depth understanding of these elements is vital for designing faculty development strategies to nurture teachers' personal and professional growth. To enhance and enrich our understanding of how SF affects medical teachers' personal and professional development, we explored the following research questions:

1. How do teachers experience feedback provided by their students?
2. How do teachers perceive the impact of student feedback on their personal and professional development as a teacher?

## 2 | METHODS

### 2.1 | Study design

We performed a cross-sectional, qualitative study based on a constructivist paradigm, meaning that the researchers acknowledge that knowledge is actively co-constructed through interactions between researchers and participants.<sup>17</sup> We used thematic analysis to explore a data corpus consisting of Rich Pictures (RP) and interviews with faculty members of the Medical School at the University of Minho (EM-UM), Portugal.<sup>18–20</sup> The Rich Pictures methodology allowed us to explore the non-verbal elements of the feedback experience by inviting teachers to get in touch with their reactions and emotions and with the contextual elements influencing the feedback process. The interviews allowed the main researcher to be a first-sight witness of participants' meaning-making process of their lived experiences.

#### 2.1.1 | Rich Pictures

Cristancho and Helmich defined the RP methodology as a 'visual method to explore complex phenomena and understand how people experience and give meaning to this complexity'.<sup>21</sup> Using a pictorial representation, the RP approach facilitates exploration of

non-conscious features of a situation such as connections, emotions, conflicts, ideas and contradictions.<sup>21,22</sup> As feedback is considered a complex interaction, we chose to use the RP approach to explore how teachers make sense of and deal with SF, believing it would bring additional information compared with interviews alone.

## 2.2 | Context

The research was conducted at the School of Medicine of the University of Minho (EM-UM), a 22-year-old institution and one of the eight medical schools in Portugal. The EM-UM has a 6-year curriculum divided into 2 years of foundation sciences, 1 year of electives and 3 years of clinical sciences. The EM-UM has approximately 800 medical students.

## 2.3 | Participants

We used a purposeful sampling strategy to ensure the diversity of participating faculty members, allowing us to gain a broader understanding of teachers' feedback experiences.<sup>23</sup> To achieve this representativeness, we targeted novice and senior teachers, basic science and clinician educators and balanced the sample in terms of gender. IC, the first author, personally approached the teachers to explain the study and invite them to participate. If the teacher was interested and willing to participate, IC scheduled the interview.

## 2.4 | Ethics

We obtained ethical approval from the ethical committee of EM-UM, the Ethics Committee for Research in Life and Health Sciences (CEICVS), file 021/2022. All participants were informed about the purpose of the study and assured that the information they gave would be treated confidentially. All participants gave written informed consent. Only the main author had access to participants' identities and audio tapes. The second author only had access to the anonymised version of the interview transcripts. The drawings did not have any element that could possibly identify participants. Finally, all the participants whose drawings were selected to be presented in this manuscript gave explicit permission to their use.

## 2.5 | Data collection

Participants were invited to draw a memorable teacher experience in which they received formal or informal feedback from students that culminated in a behavioural change (Appendix S1). Formal feedback was defined as system-based feedback (e.g. formal appraisals of performance), which is scheduled and mandatory, while informal feedback was defined as interpersonal, spontaneous and voluntary.<sup>24</sup> Participants received the drawing materials consisting of a white sheet

of paper (29.7 × 42 cm) and a set of coloured pencils and markers. Most of the participants finished the drawing in less than 20 minutes.

The semi-structured interviews were held right after the drawing was finished. The interviews consisted of two parts. First, participants told the story behind the drawing, while IC explored the picture in terms of use of space, colours, metaphors, symbols and hidden meanings. Second, IC addressed pre-selected topics related to the research question. The average duration of the interviews was 70 minutes (range 49–106 minutes). All interviews were audio-taped, transcribed verbatim and anonymised.

## 2.6 | Data analysis

We performed an inductive thematic analysis using an iterative process of data collection and analysis. This means the research team used initial insights and ideas gained from the first interviews and RPs to inform and shape subsequent data collection by further exploring these aspects and ideas in the next interviews.<sup>17</sup>

We used the six steps approach to thematic analysis, as described by Brown and Clark: becoming familiar with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and reporting.<sup>20</sup> First, the first author (IC) actively read and re-read the interviews to familiarise herself with the data. Next, the two researchers independently coded the first two interviews to generate an initial coding framework and resolved disagreements by consensus. Then IC coded the following interviews and held weekly meetings with MACF to refine and expand the coding process. IC and MACF reorganised, compared and combined codes to generate themes. Thematic mapping played an important role in the process of making sense of potential themes and subthemes and connections between them. Thematic maps were schematic visual representations of the data used to group the codes into clusters to facilitate meaning-making and generation of overarching themes.<sup>20</sup> IC shared and discussed the thematic maps with MACF to consolidate a mutual understanding of the data. In the next step, IC and MACF actively refined, clustered or suppressed the themes generated in the previous steps. Both authors went back and forth to the original data to check the credibility of the themes and reflect on the influence of their own viewpoints. Subsequently, they selected relevant parts of the data to illustrate the themes. Finally, the authors engaged with the process of writing the report, which offered opportunities for final insights and understandings.

We analysed the RPs in parallel with the interviews, so the RPs also informed the coding process, thematic map creation and the generation of themes. We discussed each RP in a separate meeting. In the meetings, IC showed the RP to MACF, who remained unaware of the interview content and was asked to describe the drawing, focusing on the use of space, colours, metaphors and symbols. Then, MACF shared a general interpretation of the drawing and tried to figure out the message conveyed. After this, IC shared the story behind the drawing and together the researchers further explored the meanings and assumptions behind the drawing and connected it with the interview. In our previous experience with this methodology, we learned that this structured approach

optimises insights and informs subsequent interviews while opening a window to participants' subjective experience.<sup>25,26</sup> In the specific case of this research, for instance, the use of RPs helped us understand how teachers conceptualised the feedback encounter not only as one moment in time but also as an ongoing process in the context of a relationship with a student or a group of students.

## 2.7 | Research team and reflexivity

IC, the first author, is a sixth-year medical student at the EM-UM, who served as a student representative and was involved in several curriculum development initiatives. This insider position helped IC contextualise the data, taking into account local academic and educational norms, attitudes and values. Although IC engaged in curriculum development initiatives, during the period this research was conducted, there was not any direct (professional or personal) relationship between this author and the participants.

MACF has worked as a clinician educator for almost 20 years and is currently a professor of research in health profession education. MACF has experience with qualitative research, including the RP methodology.<sup>25,26</sup> As a teacher, MACF had the ability to relate to the narratives, while as an outsider, he could put institutional culture into perspective and make strange what is considered 'normal'. MACF is also deeply influenced by the concepts of Critical Pedagogy, which considers education a democratic and dialogical process that transforms both students and teachers, which justifies the interest in studying SF.<sup>27</sup>

## 3 | RESULTS

The total sample consisted of 14 participants. An overview of the participants and their demographics can be found in Table 1.

**TABLE 1** Participants' demography.

Participants	Gender	Teaching experience (years)	Educator
B01S	Female	20	Basic Sciences
B02S	Female	25	Basic Sciences
B03S	Male	19	Basic Sciences
B04S	Female	20	Basic Sciences
B05S	Male	22	Basic Sciences
B06S	Male	26	Basic Sciences
C01S	Male	26	Clinician
C02S	Male	11	Clinician
C03S	Male	13	Clinician
C04S	Female	12	Clinician
C05S	Male	21	Clinician
C06J	Female	3	Clinician
C07J	Female	3	Clinician
C08J	Male	5	Clinician

Note: 'J' = teaching experience lower than 10 years; 'S' = Teaching experience greater than 10 years.

Of the 14 Rich Pictures, 10 depicted informal feedback, three depicted formal feedback and one was a metaphoric representation of education and the act of teaching. The RPs highlighted teachers' emotional experiences in receiving SF and increased our understanding of the varied nature and timeframe of experiences that teachers considered SF. These experiences could be private or public, take place in the context of a relationship or an online report and range from hours to months. All depicted experiences impacted participants' professional trajectories.

We recognised four dimensions that influence how teachers engage with SF: 'Emotions talk and teachers listen', 'The student-teacher relationship is a powerful feedback', 'Student feedback has facilitators and barriers' and 'Student feedback matters'. We elaborate on these dimensions in the following paragraphs.

### 3.1 | Emotions talk and teachers listen

Getting feedback from students is often a moment of vulnerability and may evoke positive and negative emotions.

When the SF was consistent with teachers' self-concept or took the form of praise and public recognition, teachers felt proud of themselves and rewarded. Moreover, when such positive feedback occurred in consecutive cycles, teachers felt motivated and experienced increased self-confidence, which reassured their teacher identity and encouraged the adoption of a feedback-seeking behaviour.

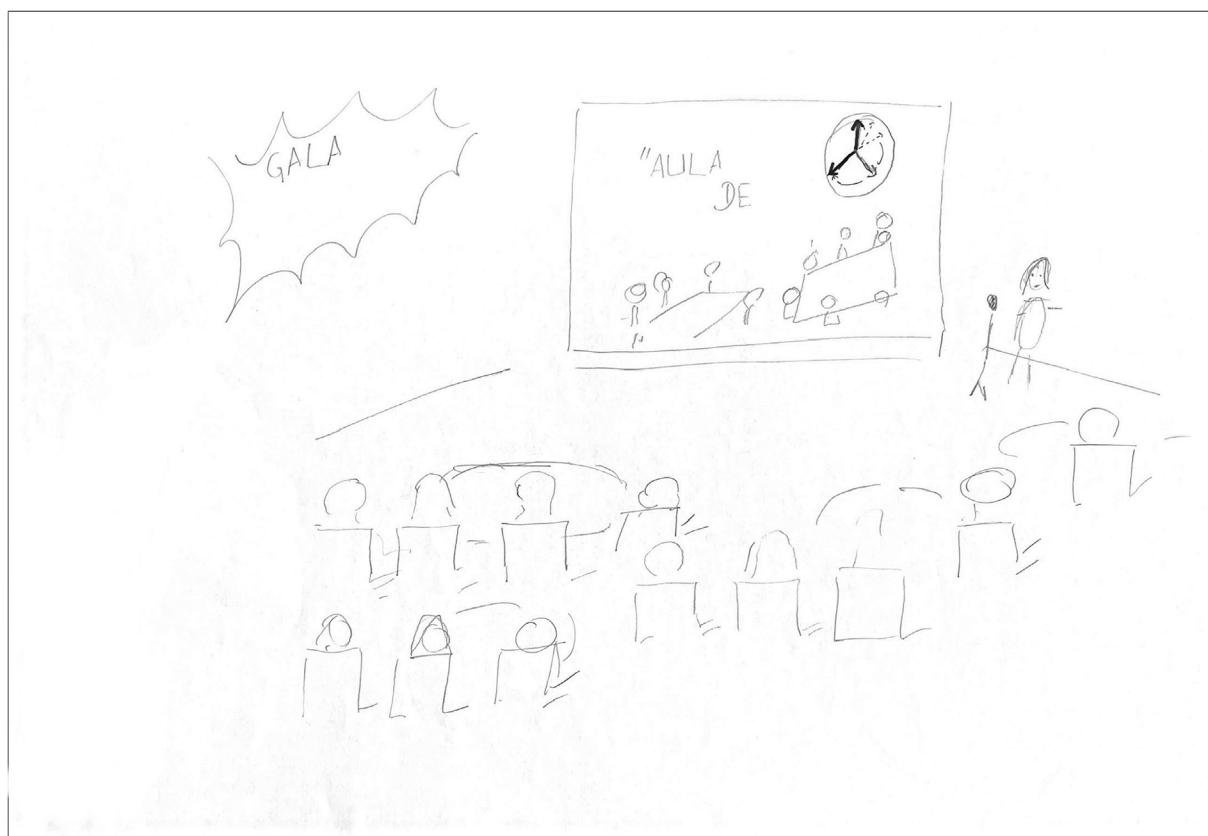
I've students with whom I work, with whom I've developed projects, who -even when they've negative marks- come to me and say: 'I don't think the assessment mirrors my level of engagement or all the things we've done together, but I really enjoyed being with you and I learned a lot.' This is a very important

reward. (...) This means we did things well. It also means that there was proximity, that – how do I say this? – the student made a visible gain. We all know, from our own trajectories, that there are iconic people who have shaped us, who have helped us improve our behaviour, and changed the way we see things. So, it's very important to see this transformation. C05S

However, when teachers felt insecure about their teaching skills or interpreted students' words as harsh criticism about their abilities to serve as role models, SF could trigger powerful negative emotions such as shame, anxiety and discomfort. These negative emotions were amplified when the feedback was made public to other faculty members or was inconsistent with the teacher's self-concept (Figure 1). Self-concept can be defined as 'the perception(s) one has of oneself in terms of personal attributes and the various roles which are played

or fulfilled by the individual'.<sup>28</sup> For example, teachers may feel threatened when they believe their attitudes are conducive to creating a safe learning environment and the feedback received shows otherwise. When negative emotions take over, and SF becomes a traumatic experience, teachers often adopt feedback-avoiding behaviours, which may prevent them from reflecting on their practices and learning from students.

For me, what's deeply traumatic is the exposure in front of a lot of people ... Really, quite a lot of people, right? The whole school was there, particularly teacher X, teacher Y and other people we (the school community) admire ... Of course, I felt really uncomfortable. I made my way home crying. I felt very, very, very uncomfortable because it was extremely unfair ... It was something that hurt me a lot. I felt really, really hurt .... B02S



**FIGURE 1** Rich Picture B02S. This rich picture represents an informal and traditional activity at the EM-UM that marks the transition from one educational unit to another, a time when teachers and students gather in a lecture hall to celebrate their achievements. Generally, during this activity, students share funny and positive stories about their classes and teachers, acknowledging how impactful teachers were on their educational trajectories. However, Catarina (fictitious name), the teacher who drew the picture, depicted a moment during the celebration when students decided to make fun of her. During the educational unit, Catarina was late for one of her classes due to personal problems. When Catarina arrived at the class, she became angry with the students because they could have started the activity scheduled for the class but chose to wait for her. Months later, during the celebration, the students performed a small play (rectangle with a clock in it) in which Catarina was represented as angry and yelling at the students for no reason after she arrived 45 minutes late for her own class. Catarina (not represented in the RP) felt exposed (the audience is at the bottom of the picture), sad, embarrassed, disrespected, and treated unfairly. She just wanted to go home. During the interview, these negative emotions returned and Catarina concluded that this was a traumatic experience that had moved her away from the students (and their feedback).

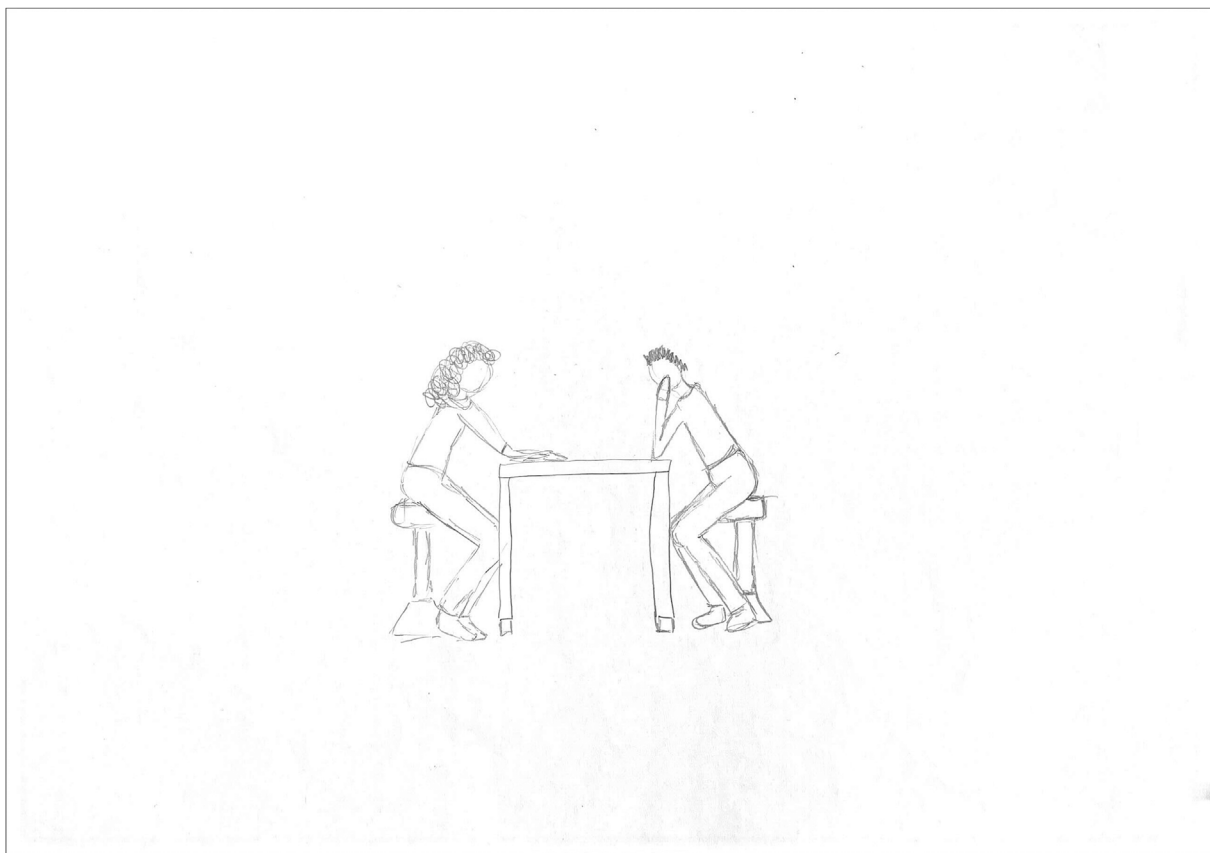
Nevertheless, in some circumstances, teachers were capable of dealing with and metabolising SF they initially perceived as threatening and disruptive. In fact, teachers believed that their personal and professional values and personality influenced how they dealt with SF. When, for example, teachers had a growth mindset and believed that setbacks were opportunities to learn, they tended to take disruptive feedback experiences as an opportunity to engage in self-reflection and behavioural change. However, change did not happen immediately. Actually, it could take days, weeks, months, or even years, for disruptive feedback to be internalised and culminate in teachers' development. Notably, in some interviews, participants relived such disruptive experiences with a similar intensity, even showing comparable emotional responses.

What happened is that a student pointed out to me that the two metaphors I was using in class could create ... were based on prejudice. In fact, it was the truth. I recognized it was true. (...) I confess I got frozen, because I understood the message. I kept that with me

for months, even years. I couldn't give that specific lecture for two years. I was ... so ... I kept reflecting on this. I had a recipe to teach that subject which I thought was successful, but (it) wasn't appropriate. Well, in a certain way, this was what I learned from the feedback in the most brutal way. I learned how to correct my attitude and understood that in a room there's a lot of diversity. C01S

### 3.2 | The student–teacher relationship is a powerful feedback

The participants emphasised the impact of their relationships with students on the way they perceived and internalised SF. The relationships were considered so relevant that two participants drew the relationship itself as the core element of their pictures; that is, they drew the 'relationship' as the 'feedback' (Figure 2). In general, participants believed that the student–teacher relationship could be a tool to



**FIGURE 2** Rich Picture B01S. This RP is a metaphoric representation of how a relationship with a student may inform teachers' personal and professional development. Amália (the teacher, fictitious name, on the left) engaged in a series of private conversations with Rui (the student, fictitious name, on the right). Rui was struggling with the idea of becoming a doctor and was desperate for help (hands on the head). During the conversations, Rui shared that he did not feel capable of following the medical course and experienced a lot of pressure from his parents. Amália supported Rui in overcoming his academic challenges and helped him reflect on his considerations of whether or not to become a doctor. Amália re-discovered the purpose of becoming a teacher and felt proud of herself for being able to support Rui. It was a turning point in her career: She realised that making a difference in students' personal and professional trajectories goes beyond transferring knowledge.

understand students' needs, concerns and thoughts and gather relevant information about the teaching activities. Some teachers actively and strategically approached some selected students to build up relationships that could be used as a source of relevant and meaningful information to improve their performance. Such relationships offered opportunities for reflection that often generated personal and professional development.

I think that (the relationship with this student) was a decisive moment in his (the student's) life, but also in mine in terms of being a teacher and a human being. Maybe even more as (in terms of being) a human being than anything else. B01S

Since student-teacher relationships allow feedback to happen continuously, they strengthen students' messages and potentialise SF impact. However, for a student-teacher relationship to be perceived as feedback, it needs to be based on trust, mutual respect and empathy. It also needs to offer a safe 'place' to care for each other and share meaningful experiences.

That (the relationship) makes it easier. Why does it make it easier? Because you establish a relationship of trust, isn't it? If I know the student and if this student gives me feedback, I definitely value her opinion because of our trustful relationship. I recognize she's trying to make things better and feedback isn't related to a personal agenda. C03S

### 3.3 | Student feedback has facilitators and barriers

Acceptance of feedback increased when the teacher respected and trusted the feedback-giving student, when the teacher was open to feedback and had a closer relationship with the student or when the student showed greater engagement during academic activities. Similarly, when the school environment valued and stimulated feedback, teachers felt encouraged to adapt to this culture.

Feedback given by a student who is less active, less participative, who seems less focused on class, who contributes less to the group is empty feedback. C07J

For teachers, honest feedback, a heartfelt opinion without ulterior motives, was fundamental for feedback acceptance. Getting honest feedback from students in a private setting with no interruptions helped them feel safe and open to internalise SF.

Honest in the sense that there is no ulterior motive. There's no intention to give a suggestion to make assessments easier ... There's no intention to play with the teacher's ego to get a better grade afterwards. There's

no intention to put pressure to make assessments easier for the next year. Or this ... or that .... C01S

On the contrary, when teachers believed that students had a hidden agenda or when feedback was made public, SF was considered unreliable and uncomfortable, which hindered its acceptance. Moreover, teachers' high workload (Figure 3) and the existence of a shame and blame culture in the institution did not only hinder the collection of feedback, it also prevented teachers from reflecting on the feedback received.

Above all, don't create a mechanism of ridicule and humiliation, neither for teachers nor for students, because the worst you can have is an unsafe environment. C05S

When you don't have enough time, it's hard to stop and think: 'Okay, specifically, what happened? And what can I do to improve what he told me?' C06J

### 3.4 | Students' feedback matters

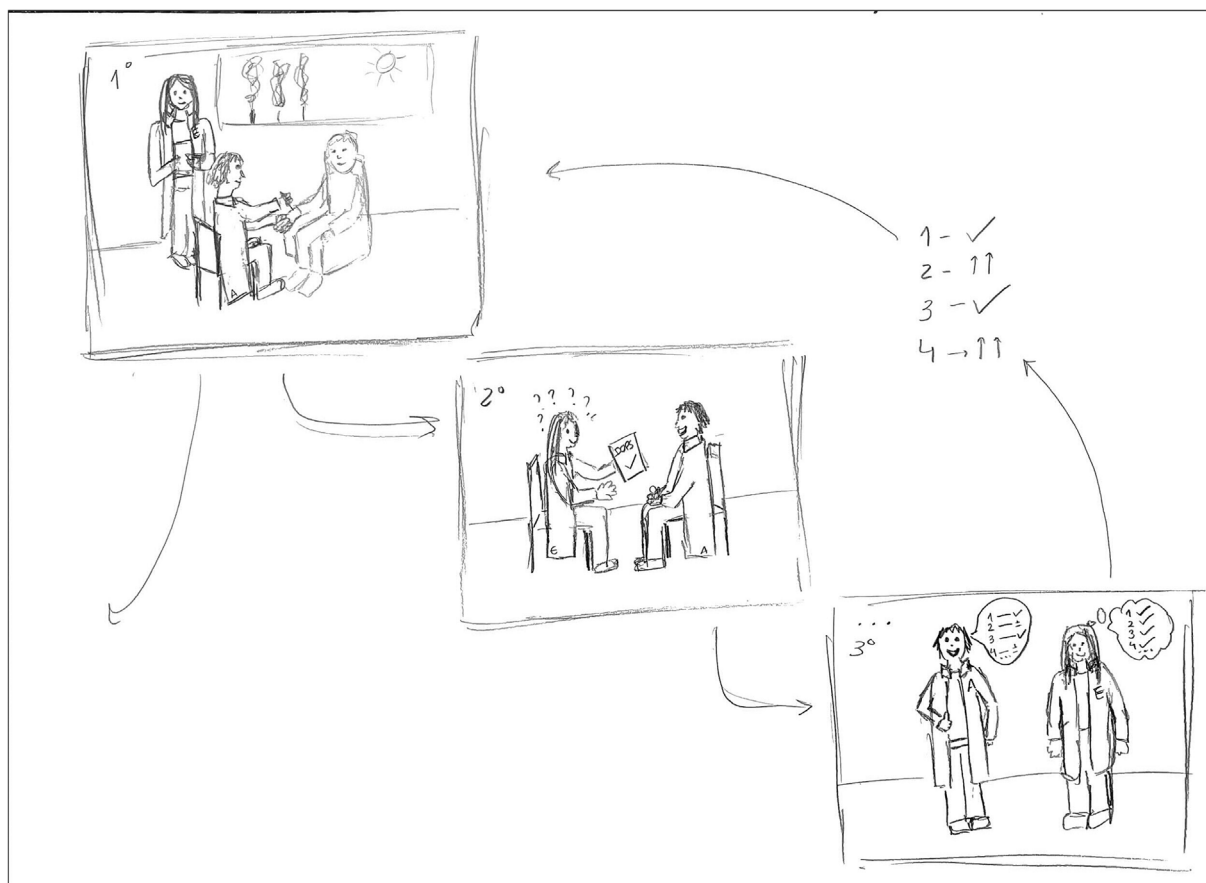
Participants believed that formal feedback is important for improving curricula and renewing pedagogical activities, because it is scheduled and structured, and addresses specific and pre-defined issues. Formal feedback provided reliable and actionable information about how pedagogical activities took place, what worked well and what should be improved (Figure 4).

I think that what (the feedback) comes from the School Board (responsible for gathering SF) was scrutinized by students, so I think that what is written there is what the majority of students think. There is really factual and organizational feedback. B06S

Informal feedback was interpersonal and built upon a shared understanding of the teachers' practice and attitude. The participants found this dialogic process very efficient in challenging their views. The insights these interactions offered could be so powerful that some teachers ended up questioning their past professional decisions and changing their professional trajectories.

I like receiving feedback at any time: just after the class, when it's fresh ... while standing in line, waiting for coffee ... For my professional development, I believe spontaneous feedback is more important. My professional development is what I search for in students' feedback. (...) I have my own way of teaching, but if I talk with a student who's telling me 'Ah, but this ...' and another saying 'Ah, but that ...', I start thinking I'm stuck in my own perspective. 'Would I change my way of teaching if I'd see it from a different perspective?' So, I reconsider my perspective. For this reason,





**FIGURE 3** Rich Picture C06J. This RP represents a sequence of interactions between Mariana (clinician educator, fictitious name) and Carlos (medical student, fictitious name). On the first square (top left), Carlos is collecting arterial blood from a patient while being assessed by Mariana. On the second square (middle), Carlos is getting formal feedback from Mariana, who decided to discuss Carlos's performance beyond the items on her formal checklist. After the encounter, Mariana doubted whether Carlos would take advantage of the extended feedback. Weeks later (third square—bottom right), Carlos asked Mariana if they could talk about her approach to giving feedback. Mariana was in a hurry, overwhelmed with clinical duties, and initially did not want to 'lose' time talking to him. However, when she understood that talking to Carlos was an opportunity to get feedback, she decided to listen to him. Carlos pointed out to Mariana what was his experience with the extended feedback: what he liked, and what could be improved (dialogue balloons with numbers on the third square—bottom right). Because she was in a hurry, she failed in adopting a reflective attitude, even though she was open to his criticisms. She committed herself to create time to further reflect on Carlos' feedback and improve her approach to giving feedback on clinical tasks (curved arrow connecting the third and the first square, meaning consecutive cycles of learning from SF). Eventually, she learned the importance of searching for student feedback and reflected on how easy it is to miss these opportunities for improvement when dealing with busy clinical schedules.

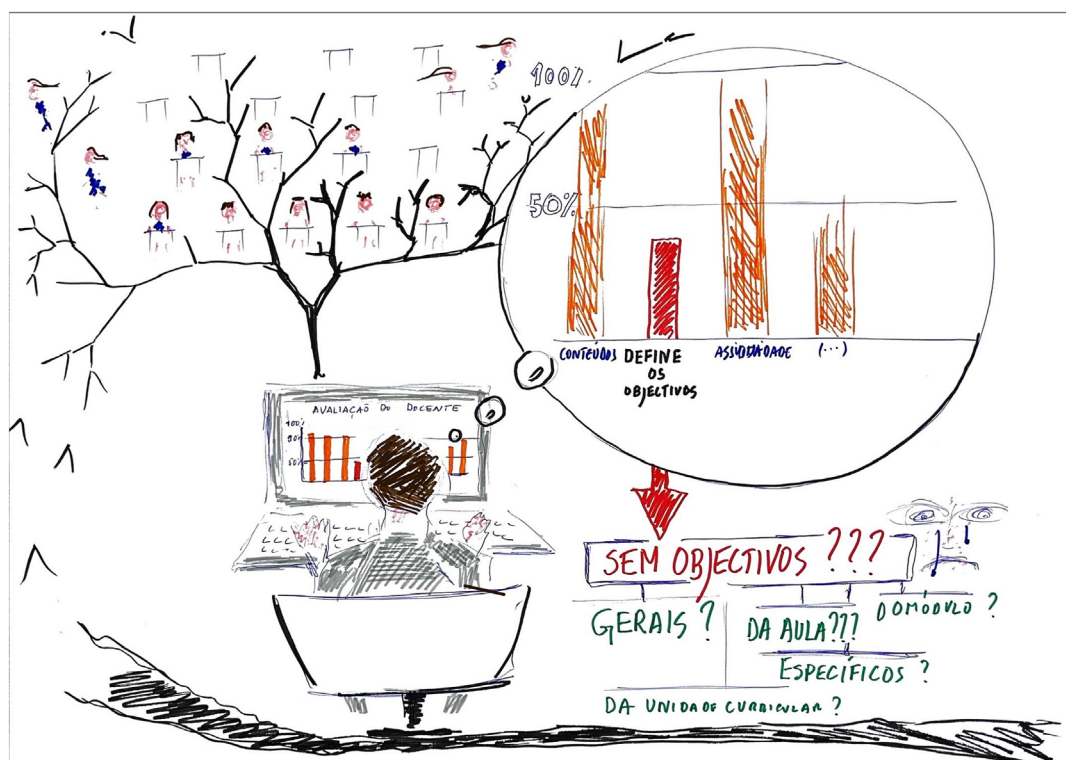
next time, I may use a different teaching approach which is based on a different perspective. B05S

## 4 | DISCUSSION

Our research adds to the existing literature on SF by revealing how emotionally charged and possibly transformative informal SF can be when teachers are available to engage in a critically reflective process. Not surprisingly, the student–teacher relationship plays a major role in modulating feedback acceptance. Besides, teachers actively use this relationship to inform their practices and attitudes and reflect on their values and professional identity. In the following paragraphs, grounded in our data, we will elaborate on the role of emotions in the

SF process. We will discuss how the teacher–student relationship affects feedback acceptance and then we will explore how SF may become a transformative learning experience for teachers. We believe that our reflections can encourage teachers to use SF to improve their performance and nurture their professional identity.

Recently, Ajjawi, Olson and McNaughton identified four different discourses on how the feedback literature addresses emotions.<sup>29</sup> Although the review focused on teacher feedback received by students, it can still inform our discussion. In the first discourse 'Emotions as physiology', emotions are understood as internal and universally experienced biological processes.<sup>29</sup> In the second discourse, 'Emotion as skill', emotions are seen as subject to control, regulation and manipulation to facilitate feedback uptake. In the third discourse, 'Emotion as reflective practice', emotions are understood



**FIGURE 4** Rich Picture C02S. In this RP, Cristiano (fictitious name) depicts the feedback he received from students through the formal channels of the medical school. The feedback arrived at the end of the curricular year. Cristiano (sitting behind the computer at the bottom of the drawing) was the coordinator of a curricular unit for the first time. He got surprised by the fact that students perceived that the learning objectives were not well-defined (red bar inside the thought-balloon). Initially, Cristiano felt sad and incompetent as a coordinator (crying face on the bottom right). Cristiano imagined that the students would feel lost during classes if they did not understand the learning goals (diagram similar to a tree with people running away on the top left). Aroused by the feedback, Cristiano decided to talk to some students to better understand their challenges and the weaknesses of the course. This broader understanding helped Cristiano improve the curricular unit and clarify its learning goals. [Color figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

as an opportunity to engage with meaningful reflections to achieve transformative learning.<sup>29</sup> In the fourth and final discourse ‘Emotion as socio-cultural mediator’, emotions are perceived as constituents of a certain cultural context, with shared understandings, meanings, and values. In this discourse, emotions emerge not only as part of the message but are also crucial to the process of making sense of the message.<sup>29</sup>

Our research showcases how these discourses may intersect. For instance, when SF does not match the teacher's self-concept, teachers experience intense emotions (‘Emotion as physiology’), but some teachers are able to modulate their emotional response to accommodate the student's perspective while protecting their ego (‘Emotion as skill’). This modulation nests the emotional response and may create the conditions for teachers to engage in a reflective process that, in turn, may affect their personal and professional development (‘Emotion as reflexive practice’). In addition, especially when feedback is made public, the emotional atmosphere surrounding SF may have a political impact and affect teachers' self-image and the way teachers are perceived by their peers, staff and students (‘Emotion as socio-cultural mediator’).

These four discourses intertwine during the process of internalising SF. Understanding this complexity is essential to support teachers

in finding constructive ways to make sense of SF. This complexity should also be addressed when designing a SF-based plan to improve teacher performance. Adopting a constructive stance is also important to keep teachers motivated to engage in meaningful conversations with students and serve as role models for students on how to deal positively with criticism, an important element of learning from challenging experiences.

Interestingly, the emotional charge and identity dissonance that may follow SF may evolve into a transformative learning experience. Mezirow defined transformative learning as a change of perspective, beliefs or identity due to a disorienting dilemma that leads to a critical reflection.<sup>30–33</sup> Mezirow borrowed the concept of ‘conscientisation’ from Paulo Freire to stress the need to critically reflect on (and often change) previous assumptions that are challenged by the disorienting dilemma, in our case SF, in order to grow.<sup>34,35</sup> Both authors believed that this critical reflection should serve the purpose of achieving social justice.<sup>34–36</sup> Adopting student-centred education by acknowledging students' voices shifts the traditional distribution of power in education—a change that is also needed in healthcare.<sup>35</sup> The student-teacher relationship has a power asymmetry that mirrors the patient-doctor relationship.<sup>37–40</sup> So, we hypothesise that when teachers are able to reflect on and value SF, they are also role modelling how

students can do the same with patient feedback in their future professional practice. Many doctors, including the authors of this paper, would agree on the transformative power of patient feedback.

Another interesting aspect of our research is the importance teachers attribute to their relationships with students. Inspired by the concept of Therapeutic Alliance, Telio et al. devised the concept of Educational Alliance to describe the importance of the teacher–student relationship for students to internalise feedback from teachers.<sup>5</sup> Our research extends this concept by showing that teachers' liking, respecting and trusting students is as relevant for teachers to accept SF as students liking, respecting and trusting teachers is for students to accept teacher feedback.<sup>15</sup>

## 4.1 | Implications for faculty development

To take advantage of SF, medical teachers need to reflect on their relationships with students and the emotions associated with being a teacher and receiving SF. We advocate for these reflections to take place in a safe space, where teachers can get in touch with their vulnerability in a constructive and non-judgmental environment. However, we should not underestimate the need of a personalised and tailored approach facilitated by a specialist when teachers experience traumatic feedback. Sharing these traumatic experiences in a group can be hard and unproductive, depending on the intensity of the trauma and the teacher's personality. Ideally, teachers should have both options: a reflection within a group or a face to face meeting with a professional psychologist, coach or mentor. We believe these reflections would help teachers turn challenging SF experiences into learning opportunities, possibly reinforcing their professional identities.

Informal feedback can be a potent mechanism for improving teacher performance. We believe that medical schools can promote informal feedback by providing opportunities for students and teachers to engage in meaningful conversations outside the classroom in a relaxed atmosphere. Periodic team-building activities to bring students and teachers together would be a good way to provide such opportunities and encourage these relationships.

## 4.2 | Strengths and limitations

Our research has some limitations. First, the research team consisted of a medical student and a clinician educator who have a similar cultural background, which may have narrowed the possibilities for interpretation of findings—culture influences the way we see the world and ourselves. Our data analysis could have benefited from the inclusion of additional disciplinary perspectives, such as psychology, sociology and other disciplines. Second, a medical student conducted the interviews, which may have inhibited some of the participants from sharing some of their experiences and opinions or driven them to soften some of their opinions. Third, we asked participants to reflect on a memorable SF experience that led to personal or behavioural

change, which may have led to overestimating the impact of the student–teacher relationship and emotions on feedback by not considering 'mundane' feedback experiences. Fourth, we did not address how teachers' and students' gender, age and cultural/ethnic backgrounds interfere with teachers' responses to SF.

Nevertheless, parallel use of RP and interviews proved to be an advantage of our research because it highlighted emotional responses to SF and improved our understanding of how teachers experience and cope with SF. We believe that our research adds to the medical education literature by providing new insights that may inform future research on the impact of SF on teachers' personal and professional development.

## 5 | CONCLUSION

Our research reinforces the relevance of understanding feedback as a bidirectional interaction that happens in the context of a relationship, which should be based on a dialogic and democratic process. Welcoming and legitimising students' perspectives does not mean to consent, but to create an opportunity for reflection, mutual understanding and learning. This humility is crucial to keep developing as a teacher. As Paulo Freire, the Brazilian educationalist, said: 'This is the road I have tried to follow as a teacher: living my convictions; being open to the process of knowing and sensitive to the experience of teaching as an art; being pushed forward by the challenges that prevent me from bureaucratizing my practice; accepting my limitations, yet always conscious of the necessary effort to overcome them and aware that I cannot hide them because to do so would be a failure to respect both my students and myself as a teacher.'<sup>7</sup>

### AUTHOR CONTRIBUTIONS

All authors have directly participated in the conception and writing of the manuscript and have approved the final version for publication.

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### CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest.

### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

### ETHICS STATEMENT

Ethical approval was obtained from the ethical committee of EM-UM, the Ethics Committee Research in Life and Health Sciences (CEICVS), file 021/2022. All the participants signed the consent term. The sound of the taped interviews and the RPs were anonymously stored until the posterior data analysis.

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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