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'I don't know if people realize the impact of their words': how does feedback during internship impact nursing student learning?

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ABSTRACT
Previous studies on the factors that can affect self-esteem and clinical skills during training among bachelor's-level nursing students in Belgium have shown that internships – and evaluation and feedback moments, more specifically – were key points in that process. We did a study to better understand how students experience those moments and which specific aspects of feedback are involved. This article focuses on how feedback is experienced and on the consequences of that in terms of learning. Here we identify the aspects of feedback that can result in positive or negative experiences, with different implications for learning. Our findings highlight the key role that – along with valence – the focus and tone of feedback plays. In addition, students' lived experience can heighten or dampen their motivation to act on feedback and affect how they regulate their learning behavior when feedback is experienced either positively or negatively. Generally speaking, students show resistance or rejection when feedback is experienced negatively. While these results are consistent with other studies, further research is needed to explore the emotional process at work in feedback processing.

KEYWORDS
Feedback; learning; internship; nursing

Introduction

This study focuses on the effects of initial training on the self-esteem and clinical skills of nursing students. Interviews were conducted to identify 'self-esteem moments' (Mruk 2013) experienced during training and determine how those moments impacted learning. Several themes emerged from the interviews, showing a particularly strong link with self-esteem. Among those themes, we chose to focus more specifically on feedback reception in the internship context, because students frequently reported that those moments had an impact on their self-esteem and possibly prompted them to change some of their learning strategies. In this paper we concentrate on the effects that feedback received during internship had on student learning, since the impact of feedback on student self-esteem is described in another article (Dancot et al. 2021).

Conceptual framework

When asked what could positively or negatively affect their self-esteem during their initial nursing training, interviewees often mentioned internship feedback.

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The multiple meanings of feedback

Feedback has been defined in the literature in a variety of ways since the 1980s. Of the well-known definitions in education, Shute's (2008) is among those most often cited (Lipnevich and Panadero 2021). She defines feedback as 'information communicated to the learner that is intended to modify his or her thinking or behavior for the purpose of improving learning' (Shute 2008, p. 154). This, and other similar definitions, illustrate how feedback was initially understood – that is, as information given to students about some aspect(s) of performed tasks or comprehension (Hattie and Timperley 2007). Many authors offer guidelines on how to design and deliver feedback in a way that supports good practices in education (Black and Wiliam 1998; Nicol and Macfarlane-Dick 2006; Brookhart 2008).

Nowadays, however, many experts believe that viewing feedback only as information is insufficient (Boud and Molloy 2013; Henderson et al. 2019). That view has significant limitations, seeing students as completely passive when receiving feedback, and implies that they need do nothing to use the information given. Current research is based on a somewhat different understanding of feedback. It is now recognized that when students receive feedback they embark on a series of psychological processes, both cognitive and affective, that impact how the feedback is received, understood, integrated and ultimately used to improve learning (Lipnevich and Panadero 2021). Hence feedback is a process, not a product.

Carless and Boud (2018) definition emphasizes the active role that students play in these situations. They define feedback as 'a process through which learners make sense of information from various sources and use it to enhance their work or learning strategies' (p. 1315). It is nevertheless important to note that this shift in our understanding of feedback does not reject the notion of information, which remains fundamental to student improvement (Winstone and Carless 2020), but situates information within a broader understanding of feedback, now regarded as a process. In other words, there is no need to choose between the two conceptions of feedback, since the latter evolved from the former.

The importance of feedback for learning

If feedback still captures the interest of researchers after more than three decades, it is likely due to its importance in the learning process. According to Hattie and Timperley (2007), feedback helps students identify the aims of the tasks they are given, assess their performance on those tasks relative to those aims, and determine possible actions to close the gap between their actual and intended level of performance (Ibarra-Sáiz, Rodríguez-Gómez, and Boud 2020).

Thus, feedback is part of a broader process known as self-regulated learning (Butler and Winne 1995; Zimmerman and Schunk 2011), in which students modify their learning strategies in order to achieve their goals and/or meet academic standards. From that perspective, external feedback helps students develop their evaluative judgment capacities (Boud et al. 2018; Ibarra-Sáiz, Rodríguez-Gómez, and Boud 2020) in order to self-assess their learning strategies (Nicol and Macfarlane-Dick 2006) as an essential component of self-regulated learning.

Methodology

Context and aim of the study

We followed nursing students from their first to their fourth and final year of training. The aim of the research was twofold: to understand how student's self-esteem may change during training, and to explore the relationship between self-esteem and clinical skill development.

The recent understanding of feedback as a process that actively involves students raises many questions. While it is widely acknowledged that feedback is not always effective (Price

et al. 2010), that students do not automatically use it (Winstone et al. 2017), and that it can even have detrimental effects (Kluger and DeNisi 1996), the factors and processes that diminish the benefits of feedback need further study, particularly in the context of nursing internships. In that particular high-stakes context, feedback, while common, is often informal and delivered by an assortment of people, not all them trained to do so. It is therefore important to understand what can support or hinder constructive feedback processing by students, with a view to enhancing their clinical skills.

Research protocol

Four of the 16 French-speaking Belgian institutions offering a bachelor's degree in nursing were invited to participate in the study. Institutions were selected by purposive sampling according to their location, network, size and whether they yielded maximum diversity. A total of 815 students were recruited based on their class attendance. They were monitored annually to collect quantitative and qualitative data. The quantitative data included socio-demographic information, self-esteem assessment and academic performance. Participants could agree or refuse to participate in interviews via the initial questionnaire. The qualitative data was collected through semi-structured interviews conducted during the four years of training. The interviews aimed to elucidate what might influence student self-esteem during training. The interviews for the first phase were conducted between February and May 2018, with 39 students selected on the basis of a theoretical sampling aimed at maximum diversity. Twenty of the 39 students who participated in the first interview also took part in the third interview, conducted between March and April 2020. During this final interview, the investigator explicitly asked the students to recall a feedback situation that had significantly impacted them.

For the purposes of this study, the texts from these interviews were sorted into four categories identified as having an impact on student self-esteem: relationships with nurses during internships; relationships with instructors; relationships with peers; and feedback situations. In this study we focused on words associated with internship feedback situations. In order to consider those situations in a way that was sufficiently broad, we included both formal assessments during the internships – conducted by both nursing school instructors and staff at the hospital where the internship took place – and informal feedback from nurses, peers, patients and patients' relatives.

Data analysis

Data analysis was a two-phase process (see Figure 1) using a hermeneutic phenomenological approach (Cohen, Kahn, and Steeves 2000). This approach attempts to understand a

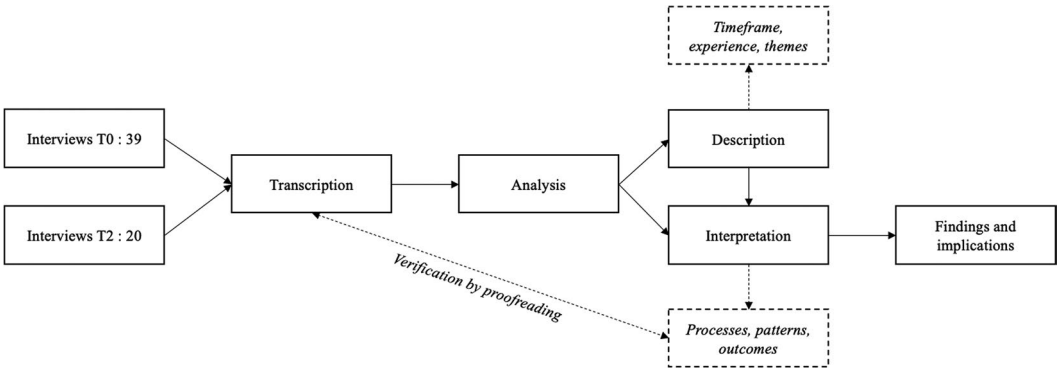

Figure 1. Schematic of the study process.

phenomenon through how it is experienced by its actors, as interpreted by the researcher (Kafle 2011). The interpretive phase, which goes beyond simply describing the experiences, makes it possible to elucidate the mechanisms likely to underlie the phenomenon being studied (Boden and Eatough 2014).

Descriptive phase

First, all of the interview texts were read by the two main researchers independently. Based on that initial reading – which aimed to identify elements in the feedback situations that might reduce or increase student self-esteem – we categorized the words by associating them with two types of experience, namely positive and negative.

Next, in order to highlight the comments related to *in situ* feedback, i.e. the moments when students received feedback about their internship, we delineated three different time frames: 'pre-feedback', 'per-feedback' and 'post-feedback'. We felt it important to precisely identify aspects of feedback design and delivery that had an impact on the students.

The words placed in the 'pre-feedback' category dealt primarily with the context in which students got feedback. Hence, those words related to the following dimensions: affective state at the moment, motivation, attribution, context, expectation of results, preparation for the task, and feedback needs.

We assigned words corresponding to specific feedback situations in the 'per-feedback' time frame. We wanted to use an existing feedback analysis grid to identify relevant dimensions and avoid missing important ones. We chose Brookhart's (2008) dimensions, considered the gold standard for student feedback design. Those dimensions are as follows: timing, quantity, mode, audience, focus, comparison, function, valence, clarity, specificity and tone. For the purposes of our study, we added the feedback source, which we felt was relevant to the internship context, where students get feedback from a variety of people.

Lastly, when assigning words to the 'post-feedback' category, we considered the aspect of feedback we called 'consequences'. The 'post-feedback' category relates to those consequences – i.e. the students' responses to feedback – and includes the following dimensions: motivation, behaviors favoring learning, defensive behaviors, resistance to feedback, cognitive analysis of feedback, affective state, emotional regulation, sense of competence and sense of worth (note that the last two are key components of self-esteem, according to Mruk 2013; see Dancot et al. 2022, for more details).

The dimensions that make up our analysis grid (see Table 1) were incorporated gradually as we independently read and coded the texts, and then compared our results to eliminate potential discrepancies between our analysis methods.

Table 1. Summary of dimensions used in the descriptive phase of the study.

Positive		Negative
Pre-feedback	Per-feedback	Post-feedback
Affective state	Timing	Motivation
Motivation	Quantity	Behaviors favoring learning
Attribution	Mode	Defensive behaviors
Context	Audience	Resistance to feedback
Expectations of results	Focus	Cognitive analysis of feedback
Preparation of the task	Comparison	Affective state
Feedback needs	Function	Emotional regulation
	Valence	Sense of competence
	Clarity	Sense of worth
	Specificity	
	Tone	
	Source	

Interpretative phase

After the descriptive phase, we constructed a second analysis grid for identifying the main themes raised by the students, in order to develop a phenomenological understanding of those themes in the form of processes or patterns between feedback reception, attitudes and behaviors in response to feedback. We defined different themes composed of words previously categorized in the descriptive phase. For example, we defined the theme 'Effect of feedback on the regulation of learning', made up of words previously coded for the 'post-feedback' time frame and labeled 'post/motivation', 'post/learning behavior', 'post/defensive or avoidance behavior' and 'post/persistence or resistance or reinforcement of beliefs'.

We collected the words included in these new themes through matrix coding queries, using NVivo12 software. Our goal was to identify different patterns in feedback processing or other significant elements within those themes. Again, we investigated the different themes independently before discussing them in order to create a shared understanding of the different ways in which students process feedback. Finally, we reviewed all the words within those new themes one last time to check the consistency of our analyses.

Results

With respect to the three timeframes used to analyze the words in the 'feedback sequence', the findings relate to the context of the feedback received by students during their internship, to the feedback itself and its processing, and to the effect on student learning behaviors.

The context in which feedback is given

The context in which students were given feedback during their internship was generally characterized by frequency. Feedback was most often given by the nursing staff with whom the students worked on a daily basis. Team leaders also provided feedback, but less frequently than other staff members, especially in the middle and at end of the internship. Nursing school instructors evaluated students two to four times per internship, and therefore had several opportunities to provide feedback. Finally, peers and patients occasionally (and sometimes unknowingly) provided feedback to student trainees. The feedback received during internship had important implications for students, because it was linked to evaluations that would ultimately determine their access to the professional world. Such high stakes were stressful to students, and some felt the need to anticipate the evaluation tasks and prepare for those key moments. Regardless of preparation, the students' experience of performance assessment situations was highly context-dependent. Students mainly cited their own physiological (e.g. tired) or affective (e.g. stressed) state, the patient's state (e.g. collaboration in the care provided, mood, etc.) and the prevailing atmosphere (e.g. tense) in the room. Students also noted the difference between the evaluations at the beginning and end of their internship, especially with regard to how acclimated they were to the functioning of the team or how familiar they were with the patients in their care.

Characteristics of positively-experienced feedback

Students perceived feedback as either positive or negative. The amount of emphasis on the various feedback characteristics was different in those two cases. When feedback was experienced positively, students emphasized a number of dimensions that seemed to have greater impact on how that feedback was perceived. Focus was the first dimension identified with positively-experienced feedback. Students characterized feedback that offered them positive information about themselves – especially about them as future professionals – as pleasant.

Feedback that focused on specific positive aspects of their performance and/or specific negative aspects that needed improvement was also perceived positively. Feedback that identified areas for improvement and gave reminders about task-related expectations was also perceived positively, even when it included elements with negative valence.

Mode was also an important factor in positive reception of feedback. Students appreciated verbal feedback and being able to discuss the feedback and give their point of view. Another dimension mentioned frequently by students was valence. Students appreciated feedback that focused on (very) positive elements. Students frequently mentioned that the evaluator's tone affected their perception of the feedback. For example, students had a positive perception of feedback expressed in a caring and understanding manner (especially with regard to the context). They were also sensitive to the fairness of the evaluator's comments, to the respect and trust that the evaluator showed them, and to the evaluator expressing positive emotions (e.g. pride). Finally, positively-perceived feedback was also characterized by certain aspects of its timing. Students appreciated regular, scheduled feedback that did not come too early in the internship, but early enough that they had time to improve.

Characteristics of negatively-experienced feedback

In situations experienced negatively, the feedback dimensions impacted students differently than positively-experienced examples. Thus, while focus was a key dimension in students' perception of feedback, it was likely to generate negative feelings if the feedback was about the student as a person, but negative, as opposed to about the way they performed a given task. Students did not appreciate overly general feedback that offered no evaluation criteria to build on or suggestions for improvement. The tone was more important in less-appreciated feedback than in positively-experienced feedback. Feedback that was not well-received was characterized by a lack of caring, consequences that seemed irremediable, failure to consider the context of the task being assessed, aggressiveness, hypocrisy or signs of annoyance from the evaluator. Mode was also an important dimension in negatively-experienced feedback, and students emphasized both verbal and written feedback.

They were sensitive to cursory, limited feedback, to receiving it in the presence of others, and to being unable to engage in dialogue with the evaluator. Timing was also significant here; students did not appreciate occasional, unexpected feedback that contradicted previous positive evaluations and came too late to allow improvement. Finally, the function dimension was mentioned frequently with regard to negatively-experienced feedback. Here, the evaluator's emphasis on the evaluative function of the feedback, on a negative score, and, if applicable, on the repercussions for the student's academic future, rendered the feedback moments unpleasant for students.

Among all the dimensions of the feedback given to students during their internship, focus and tone appeared to be particularly important, and were likely to tip the balance between positive and negative reception. Focus was essential to telling students how they were doing, what they were or were not doing well, and what they needed to improve, and to giving them guidance on how to do this; it was an important dimension for students in both cases. How the evaluator employed this dimension was important, however. For example, specifying areas for improvement was experienced positively, while not doing so was experienced negatively. Moreover, identified trends with respect to tone showed a subtle difference that was particularly noticeable with negative experiences. When evaluators presented their observations in a way that was disrespectful (e.g. with other people in the room, lack of eye contact, etc.), or mentioned negative long-term consequences (e.g. little chance of joining the profession), or failed to show empathy (e.g. did not consider an unfamiliar context), feedback was harder to receive.

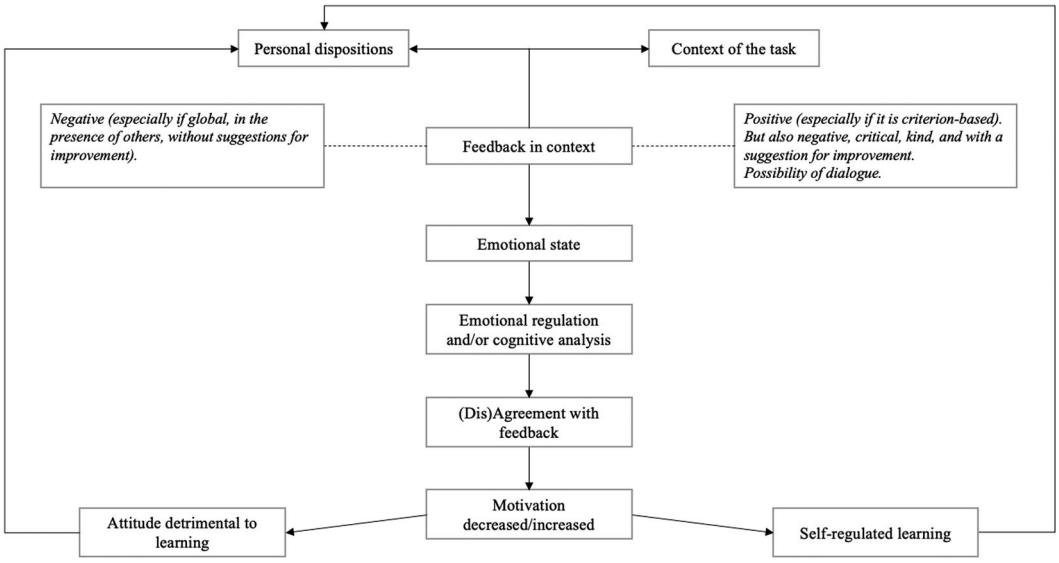

Figure 2. Integrative feedback processing and its effects on learning within nursing placements.

The process of receiving feedback

Feedback received in an internship context appears to have significant emotional impact (see Figure 2). Positive feedback about the student's person or the task performed generally produced pleasant emotions, associated with increased motivation and behaviors more conducive to learning. Negative feedback about the task more generally caused unpleasant emotions. Those emotions seemed to be limited in intensity and duration. In some cases they gave way to pleasant emotions later on. Finally, negative feedback about the student's person often caused unpleasant emotions, whose intensity was greater and whose consequences were more detrimental in a variety of ways.

We previously mentioned negative task-related feedback, which generated unpleasant but potentially changeable emotions. Low-intensity unpleasant emotions prompted some students to employ – whether consciously or not – emotional regulation strategies. The most frequently mentioned strategy was to seek support from others involved in the placement (instructor, nurse or peer). Another way students managed those unpleasant emotions was to recall previous positive experiences (positive feedback/successes). While that kind of emotional regulation (Gross 2008) was also mentioned in relation to highly unpleasant emotions, it did not always lead to adaptive self-regulated learning behaviors and improvement. Finally, some students mentioned employing such strategies after positive feedback – in order to stay focused and not ease up on their efforts to achieve good results, in particular.

Emotional regulation went hand-in-hand with cognitive analysis of feedback, which involved making sense of the feedback as information. That analysis determined both the student's affective response to the feedback and whether or not he or she was able to accept it as a resource and use it to improve learning. Hence cognitive analysis generally led students to a strategy of either regulating their learning or distancing themselves from – or even rejecting – the feedback. In the latter case, students either took the feedback in with a view to possible improvement but then failed to act upon it, or considered it irrelevant, in which case it did not result in any regulation.

The effect of feedback on self-regulated learning

Positively-experienced feedback had an impact on learning behaviors. Such feedback increased students' anticipation of subsequent internships, especially in terms of preparation.

Feedback that was considered constructive facilitated the implementation of strategies to improve student performance. Feedback that was received positively encouraged students to take initiative and engage in the tasks assigned to them. Feedback that students considered objective and that made reference to clear criteria made it easier for them to question the strategies they had used theretofore. Positively-experienced feedback made it easier for students to synthesize all the feedback they had received (including more negative experiences), allowing it to be transferred to new learning contexts. Finally, positively-perceived feedback satisfied their need for confirmation and prompted students to seek more feedback.

> I feel I can be a little more assertive and ask for a little more from the team.

Positive feedback also had an impact on student motivation; positive experiences increased the students' sense of professional efficacy. They brought students closer to their goals, in both the short and longer term.

> I was happy, it proved to me that the change I think I've made, it's really there. It's there.

A synthesis of feedback received from evaluators and the students' own predictions, if congruent and of positive valence, was also likely to increase student motivation. Student motivation increased further when positive feedback came from a source they considered legitimate.

> When the teacher who has a very difficult reputation tells you that, you think, too good. And so, I know I'm where I need to be, and it's great to feel that.

Feedback that was interpreted negatively by students had a very different impact. First, that type of feedback generated some resistance on the part of students to the remarks. That resistance was all the stronger if the student considered the source of the feedback to have little legitimacy, or if the students felt they had little or no control over the feedback. In other words, if a student felt that feedback would always have a negative valence, no matter what they did, they would not necessarily heed it.

> I thought to myself, what's the point of trying to give our all in an internship, I thought we're going to give it our all, that we could, if it's still going to get us down in the end.

Resistance to feedback was likely to translate into oppositional behavior when students perceived negative feedback as too frequent and/or unfair. In some students, such behaviors led to a kind of resignation. Resistance to negative feedback depended, in part, on the evaluator's tone. That was also the case if the evaluator expressed a negative judgement about the student as a person.

> they judged me as a person, who I was inside, and I found that inappropriate on their part.

Feedback that was not specific enough, or not supported by evidence, provoked the same kind of reaction from students. In some cases the source of the feedback was also a factor that provoked resistance. For example, negative feedback from nursing school instructors, if at odds with positive feedback from nursing staff – and vice-versa – was sometimes considered irrelevant.

> But there, the teacher's criticism when she told me that I didn't speak, I said, that's not fair, because even the nurses, when they go to a room, they say, the student, before, she's really nice, she takes her time. And then the teacher says that she doesn't talk much, I don't think that's fair.

Moreover, how students reacted sometimes depended on their ability to tolerate failure. When failure was unbearable, rejecting the feedback was one way out of that uncomfortable situation.

> It was a big blow to my heart because, as a perfectionist, I find it hard to accept defeat, or my mistakes.

Another response to negatively-experienced feedback was defensive behavior, in which students took less initiative in order to avoid the risks involved in attempting more complex tasks, or tried to be inconspicuous to avoid, if necessary, having to work with certain people on the internship team. Such behaviors indicate a kind of inhibition or withdrawal.

> a little later, I said to myself: 'I don't even want to go near her anymore because she's really too rude, and even if she had felt that way about me, she could have told me nicely and not necessarily set me on fire like that.'

Some of these behaviors revealed a shift in the students' goals from success and improvement to avoiding failure and errors – and thus additional negative feedback. Some defensive behaviors were less a matter of attitude and more about standing up for the formative concept that students have a right to make mistakes, for example – something considered necessary for all learners, which the evaluator might have lost sight of in the evaluation.

> I don't know if people realize the impact of their words, the impact of their actions, that we're still learning, we're still here to learn, they know that we're trainees and that we can't open up too much, we can't say what we think.

These defense mechanisms also include defensive attitudes such as fatalism. Some students felt that there would always be someone at every internship who felt they were not reaching the required level. Some students felt that the context of the evaluation prevented them from expressing themselves as well as they might in other circumstances.

> you are different when there is someone watching you. We can't be ourselves entirely.

Another possible student response was to seek more supportive feedback from other internship supervisors, in order to offset the negative feedback received earlier.

> Yes, because I told the team about it, so they gave me little tips and they were very careful with me.

Some students did manage to accept negative feedback, feeling that it made sense and was justified despite being difficult to hear or read. That attitude made possible the last type of response we identified in our analyses – namely, engaging in behaviors that promoted learning after a negative feedback experience. Despite some feedback being difficult to receive, students managed to use it to improve during their internship. That is, some students tried to apply the advice they received, even though it did not always seem appropriate or realistic. In other words, if students perceive negative feedback as relevant, some may reassess their learning strategies.

> So it wasn't like a very negative thing, there was a lot of questioning about me.

Some students were able to distance themselves from negative feedback by decentering. They were able to bear in mind that although personalized, feedback was not personal, and that it was intended not to diminish students but to help them identify areas of improvement so that they could meet the objectives of their placement.

> I say, okay, as soon as I get several remarks like that, I think, maybe it's because I have to do it, they don't say that to annoy me.

Finally, some students engaged in dialog with the evaluator at the time of the feedback. Some gained enough understanding of the negative feedback by doing this to make it relevant, so that they could accept and use it constructively – for example, by applying self-regulated learning strategies.

> What I should do is ask the person what principles they follow to do this technique for example. And I should also say what I have learned and the principles I use, and maybe we can find a middle ground.

Discussion

Five key findings

First, the external feedback that students receive during their internship has a particularly important meaning for students. Indeed, internship is the closest thing the students have to their intended job. As such, the tasks they perform and the skill levels they attain are seen as true indicators of their ability to perform their intended job independently and competently. This observation is fully consistent with the core function of feedback, long acknowledged in the literature (Hattie and Timperley 2007).

Second, although there are several factors that influence how a student experiences a feedback situation, information itself has a series of components that, depending on how the instructor uses them, directly impact feedback reception and interpretation by the students (Shute 2008; Lipnevich, Berg, and Smith 2016).

In addition, we think it relevant to highlight the importance of an active role for students in feedback situations. From the beginning of the feedback process, students exhibit a variety of responses that are more or less constructive, depending on the context and their own individual characteristics, such as self-esteem (Brown 2010; Dancot et al. 2021), which affect how they experience these situations. While some feedback is experienced positively by students, other feedback is experienced negatively – even very negatively. For instance, personal criticism may provoke a negative reaction to feedback (Hattie and Timperley 2007). Hence it is important that the instructor or trainer consider these characteristics and use them to provide constructive feedback.

A fourth finding is that receiving feedback during internship engages the whole person, both cognitively and affectively. In this context, feedback appears to strongly engage learners' emotions, such that emotional regulation – while it applies primarily to negatively-experienced feedback – also applies to positively-experienced feedback. With negatively-experienced feedback, emotional regulation seems to be a necessary step towards new learning behaviors, although it seems to come less into play when students show resistance or defensive behaviors, which are not conducive to self-regulated learning strategies. Emotion seems to play a particularly important role in feedback processing (Rowe, Fitness, and Wood 2014). This will be further investigated in future research.

The fifth main finding of this study is that students' interpretation of feedback generates various types of reactions that are more or less likely to lead to self-regulated learning behaviors. Thus, we found that regardless of the valence of the information that is given, feedback experienced positively generally leads to behaviors conducive to learning and to increased motivation, especially in the pursuit of training. Negatively-experienced feedback does not, however, rule out any prospect of regulating student learning. Some feedback – depending on how it is delivered by the evaluator and/or interpreted by the student – is likely to generate a positive attitude, provided the student understands the feedback and has a sense of control over his or her own progress, manifested as the implementation of self-regulated learning strategies.

Take home points for practitioners

Based on these observations, we offer the following pointers for professionals to use when giving their students feedback or preparing them to receive it.

For nursing instructors, we would highlight that some aspects of feedback render it more or less conducive to student learning: namely, focus, tone, mode, timing, valence and source. However, it seems difficult for instructors to control the context (including the students' experiences and expectations) in which feedback takes place – hence the importance of understanding in a dialogical context. Second, it is important to provide concrete avenues for improvement,

adapted to the students' abilities, with clear objectives and real opportunities for implementing those improvements. Finally, leaving the door open for dialogue can be extremely beneficial. This might mean listening to and respecting the students' views and reactions, or co-constructing the meaning of the feedback in order to engage the students more firmly in a process of self-regulated learning. Whether the feedback is positive or negative, the dialogue between student and evaluator is usually constructive (Winstone and Carless 2020). By doing this, instructors would help students develop 'feedback literacy' (Carless and Boud 2018).

For internship institution members, it would be appropriate to pay sufficient attention to the feedback process, with a view to supporting student engagement in their assigned tasks. This recommendation is based on the threefold observation that students use both internal and external resources in these situations, that management of emotions seems to play some role in this process, and that the cognitive analysis of feedback is decisive in how students identify elements that are likely to help them improve by adopting behaviors conducive to learning. In actual internship situations, it is also important that supervisors support the student in receiving and interpreting feedback and, if possible, remain open to dialogue, which can promote better use of the feedback since the student will have had a hand in formulating it.

Conclusion and prospects

In a previous study (Dancot et al. 2021) we established that feedback during future nurses' internship constituted a self-esteem moment (Mruk 2013). In other words, feedback situations during internship are particularly important to how the student perceives him/herself as a future professional, particularly with regard to his/her feelings of competence and worth.

Based on this observation, we set out to understand how students experienced these situations. Using a qualitative approach, we analyzed the texts from interviews conducted with students from four French-speaking Belgian nursing schools. We then classified the words as positive or negative according to the students' experience of them and delineated three time periods in order to understand what, in the students' verbal accounts, was related to the circumstances before they were given feedback, what was related to the feedback situation itself (i.e. the moment when the students received or became aware of it), and finally, what was related to the consequences of the feedback mentioned above.

We were then able to identify characteristics that influenced how students process feedback. Two particularly important characteristics were focus and tone. In addition, we identified a process by which feedback elicits responses that can either foster learning regulation strategies – such as increased motivation or learning-enhancing behaviors – or hinder the use of those strategies. In the latter case, the responses generally crystallized into resistance to the remarks or into defensive reactions. Sometimes, however, negative feedback led to pro-learning behaviors. In those cases, students reported using one or another emotional regulation strategy. While those were not always deployed consciously and voluntarily, they illustrate how emotional processes can affect how students process feedback. We will investigate this emotional process more specifically in future research.

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Ethical approval

This non-interventional study was approved by the ethics committee (Comité d'Éthique Hospitalo-Facultaire Universitaire de Liège (707)) and assigned reference no. 2017/233.

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