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'I did not check if the teacher gave feedback': a qualitative analysis of Taiwanese postgraduate year 1 trainees' talk around e-portfolio feedback-seeking behaviours

Ren-Huei Fu, Yu-Hsueh Cho, Francesca Quattri, Lynn V Monrouxe

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Chang Gung Medical Education Research Centre (CG-MERC), Chang Gung Memorial Hospital Linkou Branch, Gueishan, Taoyuan, Taiwan

Correspondence to
Professor Lynn V Monrouxe; monrouxe@me.com, lynnvm8@gmail.com

ABSTRACT

Objectives Despite feedback being an extensively researched and essential component of teaching and learning, there is a paucity of research examining feedback within a medical education e-portfolio setting including feedback-seeking behaviours (FSBs). FSBs can be understood within a cost–value perspective. The objective of this research is to explore the factors that influence postgraduate year 1 (PGY1) trainee doctors' FSBs via e-portfolios.

Setting Postgraduate education provision in the largest teaching hospital in Taiwan.

Participants Seventy-one PGY1s (66% male).

Methods A qualitative semistructured one-to-one interview method was adopted. Interviews were audio recorded, transcribed verbatim, anonymised and checked for completeness. Data were analysed inductively via thematic framework analysis and deductively informed using FSB theory. The process comprised data familiarisation, identification of the themes, charting and data interpretation.

Results Two main themes of FSB related and e-portfolio related were identified. We present the theme focussing on FSB here to which n=32 (22 males, 10 females) of the n=71 participants contributed meaningfully. Subthemes include factors variously affecting PGY1s' positive and negative FSBs via e-portfolios at the individual, process and technological levels. These factors include learner-related (internal values vs social influence, forced reflection); teacher-related (committed educators vs superficial feedback); technology-related (face-saving vs lagging systems; inadequate user-interface) and process-related (delayed feedback, too frequent feedback) factors.

Conclusions Our findings reveal the complexity of PGY1s' FSBs in an e-portfolio context and the interaction of numerous facilitating and inhibiting factors. Further research is required to understand the range of facilitating and inhibiting factors involved in healthcare learners' FSBs across different learning, social, institutional and national cultural settings.

Strengths and limitations of this study

- Our qualitative approach has facilitated the exploration of feedback seeking as an unexpected phenomenon within our study (ie, as highlighted by participants during the interviews rather than being the main focus of the original study).
- The multicultural, multidisciplinary make-up of the research team—including expertise in psychology, linguistics, medical education and medicine—facilitated a deeper understanding of both the process and the content of the data.
- The use of current theoretical perspectives of feedback-seeking enabled us to unpack the learner, teacher, technological and process-related factors impacting on trainees' willingness to seek out and use teachers' feedback within an e-portfolio setting that can be transferable outside the study context.
- Although only n=32 participants meaningfully contributed to our findings, this is a substantial number for a qualitative study of this kind, considering the detailed information that each participant provided.
- The context of feedback-seeking behaviours within e-portfolios in a Taiwanese teaching hospital is likely to have emphasised some of our findings, including the face-saving utility.

INTRODUCTION

Feedback is an essential component of the teaching and learning process and has been extensively researched in this decade.[1] Giving learners feedback means letting them know, in a timely and ongoing way, how they are progressing.[2 3] Indeed, during clinical placements, the provision of feedback is an integral part of the learning process, enriching students' learning experience.[3] Constructive feedback from educators enables learners to gain insight into their actions and consequences, and this allows both learners and teachers to successfully achieve personal and program-related objectives.[4] Furthermore, research suggests that some forms of feedback (eg, reinforcement, video/audio feedback, computer-assisted instructional feedback)

can be more effective than others, with effective and regular feedback having the potential to reinforce good practice and motivate the learner towards their desired outcome.[5] However, feedback is a two-way process. Although a general complaint heard from students and trainees is often that 'I never receive any feedback',[6] some clinical teachers believe that students and trainees often lack motivation for seeking feedback.[3 7] To investigate whether it is just a matter of motivation, our study focuses on trainee doctors' feedback-seeking behaviour (FSB) within e-portfolios.

Feedback-seeking behaviour

FSB has been defined as '(a) conscious devotion of effort towards determining the correctness and adequacy of behaviours for attaining values and states'.[8] For this to happen, it requires both conscious effort and motivation to change.

A recent scoping review of the literature around feedback for learners in medical education failed to identify any studies on learners' FSB.[1] Indeed, although we identified a small number of papers on FSB within medical education, the vast majority of research was conducted in organisational contexts adopting existing FSB theories without challenging their validity.[9]

FSB seems to occur in two primary ways: requesting feedback from another (typically senior) colleague or observing others' behaviours.[10] In the case of an e-portfolio, however, the 'request' comes in the form of returning to the online forum and reading the feedback provided. Ashford and Cummings proposed that the cost and value of any given action are the primary determinants of FSB.[11] Nevertheless, a number of factors affect cost and value of actions. For example, one key perceived cost is self-presentation, including the potential embarrassment of revealing one's lack of knowledge, thereby drawing attention to personal deficiencies. Other costs include ego costs (ie, the risk of being the recipient of negative information), and effort costs (ie, the risk of wasting energy and time with little return value).

Value is the perceived worth of FSB in learning new behaviours/skills to improve performance.[10] As such, the expectancy of this value has been shown to increase the frequency of FSB.[12] Furthermore, self-preservation is associated with value: through requesting feedback we can create or enhance a positive image of ourselves.[10] This theoretical work appears to transfer well into a medical education context. A qualitative study examining FSB in veterinary students during their clinical years found their FSB to be affected by perceived ego (eg, feeling incompetent through negative feedback), image (eg, the presence of peers) and costs and benefits (utility of feedback).[13]

Goal orientation theory (personal goal preferences in achievement situations) has also been used to understand influences on the feedback-seeking process and comprises two main orientations: performance and learning goal orientations.[10] Performance goal orientation focuses on demonstrating and validating one's competence by seeking favourable (and avoiding negative) judgements. Here individuals focus on the cost of feedback seeking, leading to low FSB. Learning goal orientation emphasises developing competence: increasing FSB to benefit their job performance and for self-enhancement.[10] Situational factors have been shown to have a strong impact on which orientation is used.[10]

Research in medical education has considered resident doctors' goal orientation around feedback seeking.[14] A positive relationship between the value placed on feedback and FSB frequency was identified.[14] Additionally, the situational factor of having a supportive supervisor influenced residents' likelihood to place a high value on feedback and see fewer costs for FSB.[14] Furthermore, research with residents in Switzerland also supported the influence of situational factors on FSB: supervisors' promotion of feedback seeking was the sole predictor of residents' FSB through inquiry and increased their learning goal orientation.[15] Finally, this situational factor was associated with lower ego protection and impression management concerns.[15]

Other research in organisational and educational settings suggests that national culture can influence FSB.[3 7] Motives underlying FSB include: an instrumental motive (high FSB to facilitate personal goal achievement and develop behaviours); an image-defence motive (FSB is tied up with a wish to maintain a high social image); and an ego-defence motive (in an attempt to maintain one's ego individuals avoid seeking feedback or do so strategically).[7] Individuals from Western and Eastern (particularly Chinese) cultures are thought to react differently to such influences. Indeed, research with Chinese management students suggests that FSB is strongly related to the issue of face (ie, the fear of losing face before others), resulting in FSB being low when others are present.[3]

Feedback via e-portfolios in medical education

Portfolios assess what a learner does when functioning independently in the clinical workplace and are designed to stimulate learning from experience.[16 17] In the postgraduate arena, portfolios can be used for a number of different, yet inter-related, purposes including: as a tool for training in which a collection of skills and competencies, alongside reflective comments on development, are held; as a reflective tool of personal development for promotion selection; and as a person development tool containing reflective valuations' progress over time.[18] Portfolios in postgraduate education tend to be mandatory. To serve the purpose of education, it is suggested that portfolios should contain evidence of how learners fulfil tasks and how their competence is progressing. Nowadays, portfolios are mostly digital (e-portfolios), with content that can be prescribed or left to the learners' discretion. Despite variations, their role is to record work undertaken, feedback received, progress made and plans for improvement.[19] In medical education, the content of trainees' e-portfolios may include quantitative assessments (such as the Mini-Clinical Evaluation

Exercise (Mini-CEX), Direct Observation of Procedural Skills (DOPSs), Case-Based Discussion (CBD) and 360° evaluation), reflective writing (such as medical ethics and legislation report, healthcare quality report and personal development report) and evidence-based medicine report. Clinical teachers are required to assess the trainee and provide appropriate feedback on their assessment and reports in their e-portfolios. The utilisation of e-portfolios has the potential to change the nature of learning environments and the ways in which trainee learning is promoted through different modes of learning.[20] As such, the work collected in the e-portfolio provides material for the trainee to review their learning and can be used as a basis for future assessment.

Feedback is a key element of any e-portfolio: feedback information is needed so the learner can reflect and formulate their future plans and develop learning objectives in order to improve their performance and competencies.[17] Furthermore, in the age of competency-based education, continuous, detailed and targeted feedback is essential.[21] Although staff and trainees do not always share a common understanding of the role of feedback in supporting learning,[20] evidence suggests that well-implemented portfolios are effective and practical, increase personal responsibility for learning and support professional development; so engaging in feedback via e-portfolios is of utmost importance.[22] On a positive note, feedback via e-portfolios has been shown to encourage reflection among users.[22] On the downside, scepticism about the purpose of the e-portfolio and lack of time for completion are also reported.[23] However, despite the plethora of research that has been undertaken examining FSB in an organisational setting,[24] and the potential of e-portfolios for supporting the feedback loop, to our knowledge there is no research to date that has examined FSB in the context of e-portfolios. This is an obvious omission given the often-compulsory nature of e-portfolios in the postgraduate setting and the importance of feedback for the development of professionalism and competencies in the clinical setting. Indeed, given the key role of feedback in the learning process, understanding why learners sometimes fail to take the first step and seek out their feedback is an important, yet understudied issue in the e-portfolio context.[25]

Aim and research question

The aim of our research is to understand postgraduate year 1 medical trainees' post-graduate year 1 (PGY1s) FSBs in the context of an e-portfolio, which, for the purposes of this study, we define as 'motivations and behaviours towards looking for, reading, or mentally engaging with feedback delivered via an online portfolio'. Specifically, we wish to answer the following research question:

> RQ: What are the factors that influence postgraduate year one medical trainees' feedback-seeking behaviours within an e-portfolio context?

METHODS

Study context

The study was conducted at the largest teaching hospital in Taiwan. PGY1 trainees are in the transitional period between a medical student and clinical physician. They are licensed physicians who receive a training programme as they transition from medical students to specialty residents. The PGY1 training programme of general medicine was implemented by the Taiwanese government for professional training in general practice in 2011. E-portfolios were introduced in 2013, and gradually substituted paper-based portfolios. The portfolio in this setting is a collection of evidence of the PGY1s' learning experience during their training. It comprises a default template for several assessments and evaluation criteria including a quantitative assessment (eg, Mini-CEX, DOPSs, CBD) and qualitative, reflective writing sections (eg, medical ethics and legislation report, medical care quality report and personal development report). According to Taiwanese regulations for e-portfolios, trainees are expected to fill the e-portfolios numerous times over the course of their training (14 workplace-based assessments and 22 reflective writing reports during the PGY1 training). In terms of the workplace-based assessment (eg, Mini-CEX, DOPS and CBD), clinical teachers are required to evaluate the performance of the PGY1 trainee and provide them with a score and feedback immediately following their bedside teaching. Clinical teachers are required to upload feedback to the trainees' e-portfolio afterwards. For the reflective writing reports, clinical teachers provide feedback about trainees' reports following each submission. Thus, PGY1s receive feedback for different assessments and from different rotations during the same training period.

Patient involvement

No patients were involved in the design or instigation of this study.

Design

A qualitative study with one-to-one, semi-structured interviews was employed to explore the perception and experience of PGY1 trainees about their engagement with clinical teachers' feedback provided in their e-portfolio. Following the piloting of the interview questions (n=5 PGY1) only slight changes were made. Several questions were asked in the interview, including: There are numerous reports and assessments in the e-portfolio which are followed by clinical teachers' feedback, did you read them all? If so, why? If not, why not? Do you think you have received appropriate feedback in your e-portfolio? Is there any difference between paper-based, e-portfolio and face-to-face feedback? Do you find it helpful to receive clinical teachers' feedback through the e-portfolio? Does feedback affect you in any aspect of your clinical practice? Have you changed your behaviour or advance your knowledge following feedback?

Participants

Following ethical approval, all 118 (65% male) PGY1 trainees from the 2014 cohort were approached to participate. Participants were self-selected using convenience sampling. When the researcher contacted the trainees, a brief introduction including the purposes and methodology of the research project was given to the trainees. They were told that the research was being led by a physician educator: there were nine physician educators in the hospital at the time. The trainees were assured that the interview would be anonymised after transcription. The research team members only analysed anonymised data. The researcher that performed the interview did not know any of the trainees before they met. All participation was voluntary. Informed consent was obtained. Participants comprised n=71 PGY1 (60% of cohort; 66% male) trainees. A larger participation group than originally intended was recruited due to the fact that a number of participants' interviews were brief as they had not accessed the feedback section of their e-portfolio (the first question of the interview). Given that our original focus was to examine engagement with feedback and differences between paper and electronic feedback we continued to accept participants into the study until we felt that sufficient data had been obtained to address these issues.[26] The interviews were arranged within the last 3 months of their training courses so that all participants were familiar with the e-portfolio system.

Procedure

A researcher, who was a previous medical technologist (Y-HC) external to the hospital with interview experience, conducted all interviews. Interviews were conducted in a quiet room at participants' convenience. Interviews were audio recorded, transcribed verbatim, anonymised and checked for completeness. Each interview lasted around 20–30 min and took place in a private room at the hospital.

Team reflexivity

The research team comprised a multilingual (Mandarin, Italian and English), multiprofessional (clinicians, a linguist and a psychologist) and multicultural (Taiwanese, Italian and English) group. Although the non-Taiwanese members of the research team had some proficiency in Mandarin, some of the data needed to be translated into English so that LVM could fully participate in the data analysis process. Discussions around the data were held in both Mandarin and English, and translational and cultural issues were addressed. Discussion around team members' approaches to the data, and their relative closeness to the focus of the research (e-portfolio, postgraduate participants) were held as data were analysed.

Data analysis

Data were analysed using inductive thematic framework analysis,[27] comprising data familiarisation, identification of the themes, charting and data interpretation. Additionally, as cost–value and goal orientation theories were known to the researchers, it is acknowledged that they also influenced data analysis deductively (although data were not specifically mapped to these theories). Four researchers (Ren-Huei Fu, Yu-Hsueh Cho, Chiao-Chin Chiang, Peng-Wei Hsu) read the transcripts, distributing them among each other so that all transcripts were read by at least two people. Following this, two researchers (FQ, LVM) joined the team to further develop the thematic focus of FSB. Data were translated from Mandarin to English by the Chang Gung Medical Education Research Centre official translator (see Acknowledgements). The researchers came together several times to discuss the coding framework development. The framework was written as a document to facilitate coding consistency and analytical development. Data were coded by one person. As the data were coded, further developments of the themes were discussed with the wider team and incorporated into the final analysis in the framework document.

RESULTS

Two main themes were identified, of which one is FSB related and the other one is specifically related to the e-portfolio in use (ie, comparison between e-portfolio and paper-based portfolios). This research reports on the theme of 'inhibiting and facilitating factors around FSB', which comprises four subthemes (see table 1). Thirty-two (22 males and 10 females) of the 71 participants contributed meaningfully to this theme, presented here. The remaining n=39 participants mainly focused their talk around the e-portfolio in general (eg, their engagement with it and with reflection) and comparisons between online and paper-based portfolios: and while responding to the direct questions around feedback-seeking, they did so superficially and therefore fail to contribute meaningfully to the issue of FSBs.

Inhibiting and facilitating factors around trainees' FSB

Participants discussed their engagement with feedback in terms of if and when they sought it within the e-portfolio. They discussed the various factors that influenced their engagement that we report as subthemes: (1) learner-focused factors; (2) teacher-focused factors; (3) technology-focused factors and (4) process-focused factors.

Subtheme 1: learner-focused factors

This subtheme focuses on the inhibiting and facilitating learner-related factors to participants' FSB. In terms of inhibiting factors, some participants pointed out that the lack of guidance and clear directions on how to complete the e-portfolio and what to write in it, resulted in them making inauthentic submissions. They expressed problems in terms of their own learning needs assessment that eventually impacted on the perceived utility of the feedback for personal development, further inhibiting feedback-seeking. The following participant highlighted this issue, calling for more initial guidance during their

Table 1 Learner, teacher, technology and process-related factors for trainees' feedback-seeking behaviours

	Inhibiting factors	Facilitating factors
Learner focused	Poor learning needs assessment (what to have feedback on) Emotional reactions (about teachers)	Value placed on feedback (feedback as a gift to be saved) Value placed on teachers (learning from seniors)
Teacher focused	Delayed feedback (irrelevant) Generic feedback (irrelevant)	Relevant feedback (high utility; facilitates self-regulation) Dedication to teaching (high utility; trainee respect)
Technology focused	Poor user-interface (time-wasting; irrelevant material upload) Lack of reminders (forgetting to check)	Online versus face to face (face-saving utility)
Process focused	Timing (repetition) Frequency (workload)	None mentioned

face-to-face meetings about how to complete the e-portfolio to make the subsequent feedback more relevant (so facilitating feedback-seeking motivation):

> The parts on guidance and discussion are not enough […] the thing is, if you organize the things on your own, the breadth and the depth of the feedback will be limited. Sometimes you need to have discussions with your peers and educators […] So I think, if it's a small group discussion, probably the teacher could do a more detailed guidance […] probably the students would get more. (PGY#5)

The issue of superficial feedback or generic feedback was further discussed and linked to participants' relative engagement with feedback-seeking around the patient cases they encountered. Thus, feedback was directly related to their own input whereby brief case reports received brief feedback. Some participants related this to their engagement with the clinical setting, whereas others related it to the relative importance that individual PGYs placed on the e-portfolio process itself: a lack of engagement with the e-portfolio resulted in feedback that was of little importance and therefore ignored, whereas high levels of engagement motivated feedback-seeking:

> It goes back to the point. Not every division has many cases to write. If there were a case really worth of discussion, then the teacher's feedback would also be richer. (PGY#17)

> Of course, it [feedback-seeking] is related to whether you write your e-portfolio seriously. If the teacher found it seriously written, then he would spend some time to provide feedback. (PGY#16)

Finally, emotional aspects of receiving feedback were also highlighted as a factor that inhibited participants from seeking out or reading their feedback. This emotional aspect also included how participants might perceive the feedback providers according to the type of feedback received:

> I almost never see it [the feedback from the supervisor]! Because I think that after seeing it, you would develop a stereotype about the teacher […] then suppose he gives you a high score, you would feel this teacher is good. And if he gives you a low score, you would consider the teacher is not kind. (PGY#7)

> Yes, it is embarrassed for us to say the clinical teacher's feedback is too short. That doesn't feel good. Therefore, I would rather not to look at it. (PGY#2)

Other participants (the minority) simply lacked internal motivation to seek feedback online. Reasons for this included going along with perceived social norms (ie, others do not do it so they also do not):

> I have never seen the teacher's feedback (PGY#3)

> I think no one would check the feedback in the e-portfolios. (PGY#13)

However, despite there being numerous inhibiting factors for participants' FSB, there were also learner-focused factors that were cited as facilitating feedback-seeking. The value that participants placed on feedback was a key motivating factor for seeking feedback out. Thus, feedback was seen by some as being a gift for learning. Some participants talked about feedback within e-portfolios as being the most important part of the process, facilitating practice improvement and therefore something to be actively sought out and even kept:

> If teachers give feedback based on our reports, I will have a different way of thinking about my future practice. Then, in some aspects, I would improve my clinical practice. I think 'this is good' […] of course the teacher's feedback should be saved. If we spend time writing up, we need to learn something out of it[…] I think teacher's feedback should be kept. (PGY#16)

> I would read the teacher's comments in the last part. I think that part is the most important. (PGY#18)

The high value placed on feedback includes valuing their clinical teachers' experience, even if they felt there was a generational gap around how things are done now versus how they used to be done. Essentially it is around

an openness to listen and learn from seniors, and when that openness is present, feedback is sought and valued:

> The teacher's feedback to me is […] also […] you could see how the experienced teacher handled this part. Maybe our thinking is different from the way the teachers deal with things. At that time, it's not necessarily about who is right or wrong but about how you can […] integrate the practical experiences from different aspects and make further progress. (PGY#19)

Subtheme 2: teacher-focused factors

The issue of teachers' remembering comprised the main teacher-focused inhibiting factor for FSB. Thus, some participants reported that they were unable to link feedback to their specific experiences if it was delayed, resulting in them disengaging with feedback-seeking after an initial period of engagement. Indeed, they believed that when feedback was delayed, even their educators would have forgotten the event, resulting in the feedback being construed as overly generic and 'nonsense', further inhibiting their feedback-seeking motivation:

> If the feedback was delayed, it became not so specific to my case report. I can't remember what happened to the case after I reported it. I don't think my clinical teacher remembered it either. Therefore, the report and feedback became nonsense. (PGY#20)

The issue of forgetting on the part of the teacher also interacted with forgetting on the part of the trainee:

> Sometimes my teacher forgets to give feedback, or is delayed in uploading feedback. I guess he is too busy in his clinical loading. Several days later, I might also forget to check the feedback. (PGY#2)

> I haven't seen it yet. I tried clicking before, but er, it seems that most of them [the teachers] haven't given [the feedback], so I didn't check particularly afterwards. (PGY#21)

Not only did participants refer to the issue of their teacher remembering specific events, but they also questioned whether their clinical teachers could even remember specific students. When feedback is delayed from the face-to-face event and delivered online at a later point, it is imperative that the teacher can match a face to a name as well as recall the event. Due to the number of PGYs who rotate through each department, and the generic nature of feedback received, some participants doubted the authenticity of what they read. Inauthentic feedback inhibits later feedback-seeking motivation:

> I have seen some. But the feedback I have seen is very generic, because I think that the teacher may not remember […] that many students. When he sees your name, he might not know […] he may not be able to link it [to the person]. (PGY#14)

> I am not sure if the teacher will read it carefully, because he also needs to lead many students, and he has patients, the work at the clinic, and some research and administration work […] I think it is difficult to ask every physician to read them [e-portfolios] carefully. (PGY#6)

On the flip side, some participants reported that they not only received generic, nonsensical feedback, but they also received quality feedback. Quality includes teachers feeding back on specific cases reported (relevant feedback) which were used by participants both prospectively (reading feedback and changing practice) and retrospectively (reading feedback after encountering problems to seek solutions). Further, ego factors and value intertwined. For example, reading feedback promoted new thought and action, leading to a positive self-image and therefore high levels of FSB engagement:

> Of course, actually it is not only limited in this part. When I have some clinical problems, I would check it up [the feedback] and do changes afterwards […] during the process of checking, you would find out some- some new things. (PGY#5)

> Some clinical teachers would give me feedback specific to the cases that I reported, such as the care quality report, or the ethical report. This kind of feedback always gives me new thoughts on how to manage the cases. In some way, I think it will change my way of doing practice in the future. I like to read this kind of feedback. (PGY#16)

Some participants also highlighted teachers' dedication to educating them. Educators taking feedback seriously, giving time to the trainees to improve, which further motivates trainees' positive FSB:

> Then, my mentor happened to be [names doctor], on this aspect [feedback] he works really hard […] most of the teachers, when they are doing the e-portfolio, they just deal with it by writing two or three words. But [names doctor] takes it seriously. He gives feedback seriously […] It's helpful. It's helpful […] maybe sometimes I would take a look when I feel interested. (PGY#8)

Subtheme 3: technology-focused factors

The existing technological infrastructure in use at the hospital, the e-portfolio's default template and functions, alongside the requirements for completion (ie, all workplace-based assessments and writing reports were compulsory) often discouraged trainees in finishing the task, or in them doing it properly. For example, the lack of technology infrastructure led participants to complete their submissions at home after work, causing time delays and difficulty in writing. Technology-focused factors affect the general engagement of PGY trainees with e-portfolio. They also affect the feedback system and seeking of feedback. These factors dovetail with earlier issues (inadequate submissions leading to inadequate feedback) resulting in a lack of engagement with the feedback process:

> Because if it's paper, you can bring it with you anywhere. And you can immediately see the feedback the teacher gave to you. If it's e-portfolio, if you are in the hospital, basically you don't have time to use the computer […] firstly, the computers in the hospital are not always enough, and the interface is not intuitive to use. Because after you go home […] it's [time] lagging and then you don't check. (PGY#14)

Some participants also uttered their dissatisfaction with the lack of a reminder function to alert teachers and trainees to give and receive feedback. This interacted with the issue of teachers' heavy clinical workload. As such, after checking for feedback a number of times, participants reported giving up or forgetting to check:

> I think a reminder mechanism could be set [for teachers], otherwise, [it will be] like last time [when] they did not review the e-portfolios for over six months. This is horrible. (PGY#2)

> At the time, I did not check if the teacher gave feedback, because some doctors were busy, and they wouldn't give feedback that quickly. I am thinking […] when they give it, maybe we could receive an email or something? (PGY#6)

> Or maybe, after the teacher gives feedback, something could pop out when you log into the e-portfolio the next time to remind us that the teacher given some feedback, so we could go there and read it. Otherwise, we won't remember to click […] We won't. We only click the place where we need to write. (PGY#15)

However, not everyone felt that the infrastructure was the issue: quite simply, if you want to learn, you will and if you don't want to learn, you won't—linking with the issue of learner-focused factors:

> So I said, it is a problem about people, because those who want to learn will learn for sure […] they will learn anyway […] for the people who don't want to learn […] they will not learn. It's a problem about people, nothing to do with the system! (PGY#13)

However, the fact that feedback takes place in an online space, rather than physically face to-face, was considered by some to be a technology-focused facilitating factor for FSB. Indeed, participants talked about feedback being mainly around their deficits, rather than for praise, which inhibited their desire to seek it out. Receiving negative information about one's practice is never easy, and even more so within an Eastern face-saving culture. Thus, the online nature of e-portfolios facilitates the necessary face-saving requirements around seeking out feedback, while enabling participants to learn from mistakes:

> Except when I have something that I really […] for example, I don't want to […] I felt embarrassed to discuss it [for feedback] with the teacher in person, so I would put it there in words. (PGY#13)

> I think it is not bad to have feedback in the e-portfolio. After all, we are all working at the same place. It would be embarrassing to tell us directly what was wrong. Because I maybe follow orders from other staff, one could lose face to hear negative feedback. However, we need to know what was wrong. To write it in an e-portfolio is a good idea to avoid losing face. (PGY#20)

Subtheme 4: process-focused factors

The process of the e-portfolio itself, including the timing and frequency of feedback, appeared to affect participants' FSB negatively (we have no data regarding positive aspects for this subtheme). Trainees highlighted how they are expected to reflect on the cases they experience, obtaining written feedback from their teacher/mentor via the e-portfolio. However, in workplace-based assessments, the clinical teacher often provides immediate feedback directly following the presentation of a clinical case typically by arranging discussions and teaching at the patients' bedside. The repetition of this feedback exercise was a key factor in participants' decreased e-portfolio FSB:

> Yes! [the] clinical teacher has given me a paper form feedback after our CbD [case-based discussion], the feedback in the e-portfolio appears to be redundant. I didn't look at that. […] Yeah- yeah- yeah- yeah! […] because when you have individual meetings with your teacher, you have already submitted a form. (PGY#1)

Indeed, some participants talked about how such doubling up of feedback resulted in superficial engagement on both sides:

> Well after the writing, you just review the situation! He (the teacher) just re-reads [it] and [talks about] any problems in-between [written feedback]. (PGY#15)

The frequency with which participants are required to fill in their e-portfolios appears to impact negatively on trainees' FSB. Many participants asserted that feedback lacks utility when it is provided too often:

> I think the frequency could be every 6 months or every year […] you only have that picture for your personal plan, and writing it every month won't change something. Actually, I think it is a bit too frequent. (PGY#3)

Further, this frequency increased their already high clinical workload resulting in both an impediment to using the e-portfolio in the first place (for both participants and their teachers), as well as the additional work resulting from the e-portfolio feedback (ie, being required to act on it). This translated into a reluctance for some to seek out their feedback, as engaging with it impacts on their workload:

> This [acting on it] might not be possible, because we are very busy. If I have 20 patients for that day, then I

won't do any writing. I don't even have time to finish my stuff. (PGY#9)

Monthly reports are better. We can write a more detailed reflection. Clinical teachers can then receive meaningful reports and give proper feedback. The workload will not be too heavy […] when I think about the loading, I don't want to see the feedback. (PGY#12)

DISCUSSION

Our findings highlight the complexity of aspects affecting FSBs that include individual, social, technological and organisational factors working as catalysts or inhibitors in congruence with cost–value perceptions of individuals.[28] That FSB is influenced by the perceived utility of that feedback, although for a variety of different reasons, resonates with other research that highlights how learners' FSB motivations focus on performance improvement:[11 28] if the learner anticipates that the feedback will be worthless, FSB will be low. So when learners believe that the submissions on which the feedback is based lacks authenticity, arrives too late, or is highly generic, FSB motivation reduces. But when feedback is considered relevant and delivered by dedicated educators, high FSB motivation is sustained. This finding links with research that points to learners' relationships with their seniors (including expertise and trustworthiness) as being a key aspect underlying FSB and subsequent feedback efficacy.[28–30] Other learner-centred findings such as perceived social norms (ie, no one else seeks feedback) and the strategic use of feedback (ie, prospectively and retrospectively) appear to be quite novel in the FSB literature, although a consideration of the organisational culture and its impact on feedback-giving and expectations has been acknowledged.[25] This might be due to the context in which we have examined FSB: although feedback utility has been explored, it has not considered the (in)adequacy of the work on which the feedback is focused.

In our study, poor user interface, slow connectivity and a lack of reminders inter-related with participants' low FSB. Higher FSB is associated with the online nature of the e-portfolio and how it facilitates learners' face-saving. This is particularly important within the setting of our study—Taiwan—where face-saving is of utmost importance culturally. This finding resonates with other research undertaken in an Eastern culture with management students,[3] with face-saving being considered a value within a cost–value model of FSB.[24] However, it should be noted that this face-saving benefit is not specific to Eastern cultures and manifests itself globally, although to a different extent. For example, Ginsburg *et al*[31] analysed face-saving strategies in written feedback for low-rated and high-rated Canadian PGY1 doctors. They found that feedback providers used more terms addressing PGY1s' positive face in the high-rated group (eg, 'absolutely outstanding', 'a pleasure to work with') and more hedges when providing feedback for the low-rated group ('could have', 'a little more', 'fairly'). Furthermore, feedback providers also used hedges to 'shield' themselves ('probably', 'perhaps') thereby protecting their own face, particularly in the context of providing feedback to the low-rated group.

Finally, we turn to organisational-related factors for FSB. When feedback is too late, particularly if it perceived as already having been received in a face-to-face setting in the interim, FSB is low. Furthermore, a high frequency of feedback interacts with learners' high workload leading to a reduction in FSB. Although timing and frequency of feedback has been examined in the medical education literature, previous studies concentrated on feedback efficacy, rather than its impact on FSB.[32] As such, this is a unique finding that can inform curricula development above and beyond the e-portfolio setting within which a study sits.

As with all studies, our research has limitations. First, the data have been collected at a single institution in a single country so caution must be taken for the transferability of our findings. For example, as we have highlighted, the face-saving effect might be exaggerated within a Taiwanese culture. Second, we have used a qualitative individual interview method. Such face-to-face data collection might motivate participants to present themselves positively. We are therefore careful not to quantify our data, and make no claims regarding the relative importance of factors and the magnitude of their influence. However, our study has strengths. The setting in which it was conducted is the largest teaching hospital in Taiwan, we have a relatively large participant group and have used theory to facilitate the transferability of findings within a medical education context.

Our study has implications for educational practice. Providing learners with information on how to address their learning needs, thus facilitating the relevance of their reflective writing, could result in higher levels of FSB. Faculty development focusing on the provision of relevant, focused and high-quality feedback, is recommended. We also advise e-portfolio developers to work with students and educators when developing their user systems. Finally, the implementation of an e-portfolio should be considered in the wider context of both learners' and teachers' existing workload and opportunities for face-to-face feedback to ensure that the timing and frequency of feedback does not impede learners' FSB or create additional work for busy teachers and their trainees.

Our research also highlights the need for further work in terms of researching learners' FSB within healthcare settings. In an era in which feedback studies are prevalent, too much attention has been placed on the efficacy and the delivery of the feedback itself, rather than learners FSB, which is assumed to occur. However, this is not always the case. Without fully understanding the relative factors that facilitate and impede learners' FSB across a range of learning situations, the goals

of feedback in healthcare education cannot be fully achieved.

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