



## AI enhanced feedback literacy intervention for academic success beyond first year in tertiary education

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### ABSTRACT

This study examines the integration of generative artificial intelligence (GenAI) in academic skills teaching to enhance first-year students' feedback literacy and emotional regulation upon receiving feedback. In an undergraduate Academic Skills module, feedback literacy was embedded as a core topic, and GenAI tools were leveraged to design scaffolded learning activities targeting key stages of the feedback process. Nineteen first-year students participated in a focus group and five in follow-up interviews to share their experiences with four GenAI-enabled feedback literacy activities. Using Braun and Clarke's reflexive thematic analysis, qualitative data were analysed to identify patterns in student perceptions and outcomes.

The findings indicate that incorporating GenAI-driven activities fostered greater learner engagement, self-regulation, and autonomy in the feedback process. Students reported improved ability to receive feedback constructively, internalise feedback by reflecting on its implications for their work and identity, and act on feedback through concrete revisions and goal-setting. The dialogic and interactive nature of the activities co-created with GenAI helped create a safe learning environment where students could practice giving and receiving feedback. Participants highlighted increased confidence in interpreting feedback and reduced anxiety in applying it, pointing to strengthened emotional resilience. For example, students described feedback as a tool for improvement and gaining perspective, noting the value of having someone share their insight on what could be improved. They also emphasised the importance of peer dialogue and openness as valuable for analysing an activity through a different lens for added advantage.

This article reflects on the implications of these innovations for curriculum design. It offers practical insights into how GenAI can be harnessed to cultivate feedback literacy and resilient learning dispositions in first-year students.

**Keywords:** first-year transition, feedback literacy, generative AI, peer feedback, dialogic support

### Introduction and background

Feedback literacy has emerged as a significant concept in higher education literature over the past decade, reflecting a shift from viewing feedback simply as information given by educators to considering the skills and dispositions of students in engaging with that information. Developing feedback literacy – students' ability to understand feedback and use it to improve their work – is increasingly recognised as essential for academic success and lifelong learning. Without an understanding of how feedback operates and its value, students struggle to appreciate and apply the comments they receive. Student feedback literacy denotes the understandings, capacities and dispositions needed to make sense of feedback comments and use them for enhancement of one's work. Sutton (2012) framed student feedback literacy in terms of knowing, being

and acting. Carless and Boud (2018) identify four interrelated features that represent the core of feedback literacy: appreciating feedback, making judgments, managing emotions, and taking action. In essence, students must see feedback's value, practice evaluating work (their own and others'), regulate their emotional responses to critique, and ultimately implement feedback through revisions or strategic improvements. The importance of these capabilities is reinforced by scholars like Molloy et al. (2020) who have extended the discussion of feedback literacy as 'learner's volition' or willingness to see oneself as a continuous learner and to invest effort in improvement, appreciation of feedback processes, and self-regulation abilities among others (Mamad, 2023). These capabilities help learners not only do better in university studies but also develop a core capability for the workplace and lifelong learning. Across these research studies on feedback literacy, a common thread is evident - feedback literacy involves more than just reading feedback; it is an active, holistic practice that intertwines cognitive, social, and emotional elements.

Higher education has long placed feedback at the heart of student development, yet a persistent gap exists between the feedback educators provide and the learning students actually achieve. This disconnect has prompted researchers and practitioners to look beyond the quality of feedback itself and ask a more fundamental question: are students equipped to engage with it meaningfully? It is within this context that feedback literacy has emerged as a critical area of inquiry.

Two converging needs in higher education demanded the rationale for this study (1) to better support first year students in developing feedback literacy (including the emotional fortitude to engage with feedback) and (2) to explore innovative, scalable methods for integrating feedback literacy within pedagogic practice.

### **Need for feedback literacy**

Research in assessment and learning has increasingly emphasised that students require explicit guidance and practice to become effective users of feedback (Carless & Boud, 2018; Molloy et al., 2020). Simply providing feedback does not guarantee that students internalise or act on it. First-year students are particularly in need of support in this area, as they often enter university with limited understanding of academic feedback processes and may misinterpret or overlook feedback messages (Sutton, 2012). The transition into higher education can be fraught with anxiety about academic critiques and uncertainty about standards. Many incoming students have limited experience using feedback proactively, and critical comments can sometimes trigger defensiveness or diminished confidence. Moreover, the first year is a critical period when habits and attitudes toward feedback are formed. Negative early experiences – for example, feeling overwhelmed by criticism or unsure how to improve – can lead to disengagement from feedback opportunities in later years. Sutton (2012) conceptualised feedback literacy as having epistemological (knowledge-oriented), ontological (affective identity-oriented), and practical (action-oriented) dimensions. In his model, the epistemological dimension (knowing) involves understanding what feedback means and what quality work entails; the ontological dimension (being) involves the development of a learner identity that is receptive to feedback (including confidence and openness rather than anxiety); and the practical dimension (acting) focuses on the behaviors of actively using feedback – reading it, reflecting on it, and implementing changes. This conceptualisation indicates that effective use of feedback is not automatic for students – it requires a combination of knowledge, mindset, and habits, all of which may need cultivating. It highlights that beyond understanding feedback cognitively, students must also develop an identity as confident, active learners who can handle critique constructively and translate feedback into learning actions. To handle criticism constructively, fostering

emotional resilience in the face of feedback is crucial, since without it students may disengage from feedback or fail to reap its benefits. Citing the affective component of feedback literacy, Carless and Boud (2018) note that feedback literate students “maintain emotional equilibrium and avoid defensiveness when receiving critical feedback”. Especially in the first year of university, building this capacity to “absorb” feedback without anxiety and to see it as a tool for improvement is vital to student development. There is a strong pedagogical impetus to equip students early on with the skills to receive feedback constructively, reflect on it, and use it for self-improvement (Mamad, 2023). In addition, fostering emotional resilience (or ‘feedback bravery’) in students can help counteract the discouragement or anxiety that often accompanies critical feedback. If students learn to view feedback as supportive information rather than personal judgment, they are more likely to remain motivated and take productive action (Winstone et al., 2019).

### **Generative AI in education and feedback processes**

Despite broad agreement on the importance of feedback literacy, it is not always a routine part of undergraduate curriculum. Traditional feedback practices in higher education tend to be tutor-driven and one-directional, with students often passive in the process (e.g. receiving a grade and comments at the end of an assignment). Consequently, many students neither engage deeply with feedback nor apply it to future work. According to Carless and Boud (2018), a feedback literate student doesn’t just file away feedback; they use it to set goals, revise their work, or change strategies on subsequent tasks. In their words, such a student is aware of the “imperative to take action in response to feedback information” and develops a repertoire of strategies to do so. Unless feedback is acted upon, its value is minimal, so this feature is crucial. Prior research has illuminated several challenges: large class sizes and limited contact time constrain educators from coaching students on feedback use; students often lack the skills or motivation to interpret and act on feedback independently; and the emotional hurdles associated with critique can further inhibit uptake (Henderson et al., 2019). There is a recognised need for pedagogical innovations that actively involve students in feedback processes and equip them with the mindset and strategies to use feedback effectively (Molloy et al., 2020). As Brown and Sambell (2025) argue, feedback should be reframed as a social and dialogic process rather than a one-off event, positioning students as agents in exchanges of feedback information (Woitt et al., 2023). This shift toward active learner engagement and agency in feedback underpins the push to develop students’ feedback literacy early in their university experience.

In this context, generative AI (GenAI) has emerged as a digital tool with potential to support feedback literacy development. GenAI models such as ChatGPT can produce human-like text on demand, enabling educators to generate a wide range of tailored instructional materials with relative ease. Instead of AI providing feedback to students on their assignments (a direct feedback role), this study uses AI in a design role – generating materials and scenarios that facilitate human-to-human feedback processes and student reflection. Recent scholarship posits that GenAI, when used thoughtfully, may help address some of the resource and scale challenges in feedback pedagogy. For instance, Molloy et al. (2020) note that time and workload constraints often hinder tutors from providing extensive feedback training; however, harnessing GenAI can assist tutors in creating rich, context-specific learning materials that integrate feedback literacy into the curriculum while alleviating some of the workload burden. Bozkurt (2024) similarly argues that now is the time for educators to consider GenAI’s capabilities in order to innovate teaching practices and better meet students’ needs. Literature on AI in education suggests that one of the strengths of AI tools is the ability to provide endless practice opportunities (Holmes & Tuomi, 2022). For instance, GenAI can generate multiple math problems for practice, or simulate conversations in a foreign language for a student to

practice speaking. Analogously, for feedback literacy, GenAI could simulate various feedback interactions for students to practice with. By automating the generation of examples, scenarios, or formative feedback, GenAI allows instructors to focus more on facilitating critical dialogue and less on preparing basic content. In the domain of feedback literacy, GenAI could be used to produce diverse exemplar assignments for students to evaluate, to simulate feedback comments for training purposes, or to act as a dialogic partner or practice peer-review partner – all of which might enrich students' exposure to feedback processes without placing additional strain on instructors (Tang & Putra, 2025; Saini et al., 2025). From a theoretical standpoint, use of GenAI tools to design feedback literacy activities can be seen as a means for enhancing social constructivist learning opportunities where skills like giving and using feedback are best developed through authentic activity and interaction as learning is fundamentally a social process that occurs through interactions with others and the environment (Bandura, 1977; Vygotsky, 1978). Some scholars warn that indiscriminate use of GenAI might lead to over-scaffolding where students may rely on AI for feedback or exemplar coursework which could hinder their own judgement and critical thinking abilities (Kern et al., 2023). The issue of transparency when AI is used for designing learning activities is also an ethical consideration to uphold to model academic integrity. The present study navigated these issues by positioning AI generated content as just one component of the learning design, always mediated by instructor input and class discussion. Use of GenAI in this intervention was not hidden from students as they were aware that some instructions were AI generated, which itself became a discussion point (for example if tutors should use AI for designing such activities) during the evaluation process. As literature suggests, by incorporating GenAI in an intentional and reflective manner, it can act as a catalyst for learning rather than a crutch (Holmes, 2022; Bozkurt, 2024). Use of GenAI in the context of scaffolded feedback literacy activities thus provides a particularly generative lens for this study, informing the design of feedback literacy activities that require students to interrogate feedback by asking what it is, how to respond to it and why it's important for critical engagement with feedback.

### Context and purpose of the study

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The study took place at a post-1992 widening-participating university in the United Kingdom, in the context of a foundation-year module focusing on Academic Skills. This module is a core requirement for new students enrolling for a 4-year undergraduate Business Management programme, aimed at developing foundational academic competencies such as critical thinking, information literacy, academic writing, and study skills. Recognising the crucial role of feedback in learning, the module leader (and author of this study) identified feedback literacy as a core topic to embed within the course. It is important to note, the indicative contents for this module did not explicitly include feedback literacy as an academic skill which led to identification of a gap for this intervention. Thus, alongside sessions on writing or referencing, students engaged in dedicated activities focused on understanding and using feedback as part of this study and as a core academic skill relevant to their higher education learning journey.

The class comprised 35 students in their first semester of university with a mix of home and international students. There was a diversity of prior educational experiences with some students entering post-secondary education and some returning to academic studies following a long study gap. Given this variety, a key consideration was to create a common baseline of feedback literacy knowledge and to cultivate a classroom culture of open discussion about learning and feedback.

Overall, this case study was driven by a need to cultivate a more feedback literate student body, beginning at the foundational stage of higher education. It explores how the integration of GenAI in an undergraduate

module can cultivate first-year students' feedback literacy and emotional resilience. It builds on Sutton's (2012) three-dimensional model of feedback literacy and Carless and Boud's (2018) framework of four feedback literacy features – and extends them into four constructively aligned formative activities through an innovative pedagogical approach leveraging GenAI. Through a qualitative inquiry into student experiences, the impact of these activities was examined on learners' engagement with feedback, their capacity to self-regulate and take action, and their confidence in navigating the emotional aspects of receiving and giving feedback. By reflecting on both the successes and challenges of this intervention, the article offers insights into the practicalities of embedding feedback literacy in early higher education and the affordances of GenAI in supporting such efforts. To note, ethical approval was acquired before qualitative data was collected to evaluate the effectiveness of this intervention.

### Overview of the feedback literacy intervention

Four learning activities were designed as part of this intervention, each targeting specific aspects of feedback literacy. These were introduced over two timetabled sessions across a two-week period of a 15 weeks semester. An overview of the activities is provided in Table 1 below. The design of these activities drew upon the theoretical frameworks discussed earlier.

Given the multifaceted nature of feedback literacy, researchers and educators have explored various strategies to help students develop these competencies. Two strategies frequently highlighted in the literature are peer feedback and exemplar analysis, both of which encourage active student engagement in assessment processes. Yan and Carless (2021) succinctly notes that peer feedback facilitates student capacities in composing and receiving feedback while the analysis of exemplars supports students in seeing how quality is manifested. It can demystify feedback to some extent – as students realize peers also struggle and succeed in similar ways, they may accept feedback more openly. Additionally, composing feedback can deepen their understanding of criteria and quality, which they can then apply to their own work (a process sometimes referred to as inner feedback or feedback as learning).

Exemplar analysis involves providing students with sample pieces of work (e.g., past student assignments, fabricated examples, or teacher-created models of varying quality) and engaging them in analyzing these against criteria or in comparison to each other. Research has shown that examining exemplars can clarify tacit expectations and performance standards, thus addressing the *knowledge dimension* of feedback literacy (Sutton's epistemological aspect). Carless and Boud (2023) observe that using well-chosen exemplars reduces student anxiety about assessment standards and requirements by making abstract criteria concrete. Through discussions about why an exemplar is strong or weak, students refine their evaluative judgment and learn to self-monitor their work. Moreover, such dialogue often surfaces implicit understandings of quality, giving students a vocabulary and frame of reference for interpreting feedback comments later. Exemplars serve as a learning bridge between *criteria* and *feedback*: they operationalize criteria, which in turn makes feedback more meaningful to the learner.

Another key set of strategies revolves around fostering a dialogic feedback environment. Winstone and Nash's (2016) *Developing Engagement with Feedback Toolkit (DEFT)* was explicitly designed to create structured opportunities for students to engage in dialogue about feedback, reflect on their feedback practices, and plan for action. The DEFT includes activities like feedback portfolio creation, peer discussion of feedback received, and future-oriented action planning. Studies on DEFT's implementation found that students perceived such resources as useful in improving their feedback literacy, particularly valuing the

chance to discuss feedback experiences with peers. One of the insights from Winstone et al., (2019) was that timing and voluntary participation can affect outcomes – students benefit when these interventions are embedded in their course (thus seen as a normal part of learning, not an optional add-on) and possibly introduced at a point of need (e.g., around the time they receive significant feedback). The present study takes inspiration from DEFT and similar interventions, emphasising ongoing dialogue and reflection. For example, two of the activities ('Managing Judgements' and 'Managing Affect & Taking Action') were adapted from DEFT exercises, to ground the intervention in proven pedagogical techniques.

Affective support strategies are also prominent in literature. The concept of emotional resilience or feedback resilience refers to students' capacity to withstand the emotional discomfort that feedback can sometimes provoke and to maintain a growth mindset. One approach to building this is to explicitly address the emotional side of feedback in class discussions – normalizing feelings like disappointment or confusion as common, and brainstorming coping strategies (e.g., reading feedback with a peer, taking a break and revisiting it, seeking clarification from the teacher). Another approach is to incorporate activities that let students *practice responding to critique* in a safe space. For instance, role-playing scenarios where a student receives a piece of critical feedback and has to respond politely and constructively can make students more prepared for real situations. Pitt and Norton (2017) and Chong (2020) suggest that students often lack guidance on *how to react to feedback*, and interventions that fill this gap can improve their later uptake of feedback. Managing affect is one of Carless and Boud's four features, and they recommend that students be taught strategies such as *seeking clarification*, *consulting support resources*, or *focusing on long-term improvement* to balance the immediate emotional sting of a critical comment. The intervention incorporated 'managing affect' as a specific activity theme, signaling to students that handling emotions is a learnable skill within feedback literacy.

**Table 1** GenAI integrated feedback literacy activities in an academic skills module

Activity and Focus	Description of Implementation	Feedback Literacy Components (Carless and Boud, 2018)
1. Analysing Exemplars - Understanding Quality	Students examined 2 anonymised exemplars from previous submissions received for the same module and a similar assignment. Generative AI was used to design a set of instructions for getting students in small groups to discuss the exemplars and grade them using the marking rubrics that was used for the original submission. They were then given the grades that each of the submissions received originally and were asked to review their grade and feedback for these submissions against the original grade and feedback given. They were then given a follow up task to discuss in groups the marking rubrics that applied to their upcoming assignment on this module, and discuss with peers how to interpret the marking rubrics criteria for each grade band and to set up a plan for what they need to do to achieve their target grade. This was followed by a whole class discussion on how marking criteria are applied in evaluating the quality of a submitted coursework.	<ul style="list-style-type: none"> <li>● Carefully chosen samples of student work to illustrate dimensions of quality and clarify assessment expectations</li> <li>● Reduces student anxiety about assessment standards and requirements</li> <li>● Purposeful analysis of exemplars develops students' feedback literacy by showing them about quality work.</li> <li>● Dialogue about exemplars enable tacit understandings to be experienced and</li> </ul>

		students' capacities to make judgements.
2. Appreciating Feedback-Sources & Value of Feedback	Following up on the exemplar activity, students were introduced to the concept of feedback literacy using Sutton's (2012) three-dimensional model: Knowing (epistemological dimension), being (ontological dimension and acting (practical dimension) and Carless and Boud's (2018) four inter-related features of feedback literacy principles to indicate feedback comes in different forms and requires active engagement. GenAI was used to design a lecture slide deck to expand on this concept with a set of formative activities to engage students in exploratory group discussions on possible sources of feedback in academic life (e.g. peer, self, course tutor, mentor, personal academic tutor) and paired discussions on how each source they may have received feedback from could help improve their work.	<ul style="list-style-type: none"> <li>• Understand and appreciate the role of feedback in improving work and the active learner role in these processes;</li> <li>• Recognise that feedback information comes in different forms and from different sources;</li> <li>• Use technology to access, store and revisit feedback.</li> </ul>
3. Managing Judgements-Peer Feedback Exercise	GenAI was used to design this activity adapted from Winstone and Nash's DEFT toolkit (2016). Students were put into pairs. Each student was asked to choose a topic from a list and write a paragraph on it. The topics were related to their module and upcoming assignment. Using a set of structured AI generated prompts for giving constructive feedback, students in pairs exchanged feedback on each other's work. Afterward, they reflected on how it felt to give and receive peer feedback and what they learned.	<ul style="list-style-type: none"> <li>• Develop capacities to make sound academic judgments about their own work and the work of others;</li> <li>• Participate productively in peer feedback processes;</li> <li>• Refine self-evaluative capacities over time in order to make more robust judgments.</li> </ul>
4. Managing Affect & Taking Action-Feedback Reflection and Planning	As a follow up from the above paired task, students were asked to complete a two-part activity individually. GenAI was used to design a template for this activity consisting of four sections and some prompt questions for: categorizing feedback, critical reflection, creating a SMART action plan, and gathering peer feedback on the action plan. It offered the students the opportunity to individually reflect on the peer feedback experience to note any emotionally challenging element, their reactions, and to discussing in groups, strategies to handle such situations. The instructor shared Carless & Boud's tips on maintaining emotional equilibrium. Students created a simple 'feedback action plan' using the SMART technique for their next assignment, listing what steps they would take after receiving feedback. This was then shared with a peer to receive further feedback as a means for continuous improvement.	<p><b>Managing affect</b></p> <ul style="list-style-type: none"> <li>• Maintain emotional equilibrium.</li> <li>• Proactive in eliciting suggestions from peers or teachers and continuing dialogue as needed.</li> <li>• Develop habits of striving for continuous improvement on the basis of internal and external feedback.</li> </ul> <p><b>Taking action</b></p> <ul style="list-style-type: none"> <li>• Aware of the imperative to act in response to feedback information.</li> </ul>

		<ul style="list-style-type: none"> <li>● Draw inferences from a range of feedback experiences for the purpose of continuous improvement.</li> <li>● Develop a repertoire of strategies for acting on feedback.</li> </ul>
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This contextual groundwork ensured that when it came time to gather data on student experiences, participants had engaged with a variety of feedback scenarios and tasks. The integration of AI was seamless in the sense that it served the pedagogical goals without dominating them; students were focused on the content of the activities and the interactions, with AI in the background as a content generator.

## Analysis and discussion

### Analysis

This case study employed a qualitative, exploratory design to investigate how students engaged with AI-integrated feedback literacy activities. All 35 students who engaged with these activities were invited to participate voluntarily, providing informed consent and anonymity in line with ethical standards (British Educational Research Association [BERA], 2018). Two complementary methods captured both breadth and depth of experience: a class-wide focus group and semi-structured interviews. The focus group attracted n=19 students, functioning as a reflective dialogue, encouraging peer interaction and collective meaning-making. N=5 students participated in the semi-structured interviews conducted using purposive sampling (Patton, 2015) to represent diverse engagement levels and emotional responses to feedback (Pitt & Norton, 2017). Data was analysed using Braun and Clarke’s (2021) reflexive thematic analysis (RTA), a flexible approach suitable for exploratory educational contexts. Reflexivity was integral, with the instructor–researcher maintaining a reflective journal to acknowledge positionality and mitigate bias (Berger, 2015). This methodological framework enabled an in-depth exploration of students’ cognitive, emotional, and behavioral engagement with feedback. The integration of dialogic and individual methods supported a holistic understanding of developing feedback literacy as a dynamic, relational, and self-regulatory process (Yan & Carless, 2021; Winstone & Carless, 2019).

The analysis revealed a rich tapestry of student experiences and perceptions. Four major themes capture the essence of how the generative AI-enabled feedback literacy activities influenced the learners. These are discussed below:

### Results

#### *Feedback Reframed as a tool for improvement and gaining perspective*

A dominant theme was a clear shift in how students conceptualized feedback. Early in the course, some students admitted they saw feedback as “something you get after an assignment, mostly pointing out what’s wrong,” and a few confessed they tended to “dread reading the comments” for fear of criticism. After engaging in the structured activities, however, students broadly described a reframing of feedback in

their minds. They began to emphasize its purpose for improvement and its value in providing new perspectives on their work.

One focus group exchange highlighted this change vividly. When asked what feedback means to them now, one student immediately responded: “Most importantly, things that can be improved on... wanting to achieve a higher grade and wanting to just achieve higher and be better.” Another student added, “It’s really nice to have someone else with a different insight... to look at your work and tell you... what could be improved”. These comments illustrate that the students now primarily associated feedback with improvement opportunities and personal growth. The phrase “be better” signals an internalization of a growth mindset – seeing feedback as fuel for self-improvement rather than as mere evaluation.

Furthermore, comments like “It really helped me to understand that... the other person won’t necessarily have the same point of view” a sentiment echoed by several others via nods and verbal agreement – captures the appreciation of feedback as perspective. Students recognized that feedback gives them an external viewpoint that they themselves might miss due to familiarity or bias towards their own work. The activities that involved peer review and exemplar discussion likely facilitated this realization. By reading a peer’s comments on their work or by collectively analyzing an exemplar, students experienced how another set of eyes can catch strengths and weaknesses that the author did not see. As one interviewee put it, “I learned that someone else can often spot something in my essay that I completely overlooked. That’s actually helpful, not scary.” This indicates a move from perceiving feedback as a threatening critique to reveal a clear transition towards feed-forward thinking, an essential component of feedback literacy (Carless & Boud, 2018).

#### *The role of dialogic learning in engagement*

The second theme highlights the importance of the dialogic, interactive nature of the activities in fostering student engagement. Students consistently mentioned how the format of the classes – which was highly participatory, with constant dialogue, questions, and peer interaction – made the learning experience engaging and enjoyable, which in turn made them more invested in the subject matter of feedback literacy.

One student’s enthusiastic comment during the focus group captured this well: “I really enjoyed how interactive you made the classes... constantly asking questions and taking questions.” This student appreciated that the instructor facilitated an ongoing dialogue rather than a one-way lecture.

Crucially, the interactive dialogue was not only with the instructor but also among peers. The peer feedback activity (Activity 3) and the group discussions around exemplars and emotional experiences required students to talk to each other meaningfully. One student remarked in an interview: “Because I was already comfortable with my partner... it was very flowing, it was outgoing”, referring to the peer feedback exercise.

Another student built on this, noting, “The more open someone was with their feedback, the more advantage I had... I was able to analyse that activity through their lens.” This indicates a sense of co-construction of knowledge – a hallmark of dialogic teaching where students feel their contributions shape the learning that unfolds.

The notion of a safe and comfortable environment emerged as a sub-aspect of this theme. One quote that stands out is: “It starts with the teacher... you set an environment for us to feel comfortable.” This indicates the crucial role of an instructor in establishing a climate where students felt at ease participating. The ability to feel safe and unjudged is essential for students to take the risks involved in giving honest feedback, admitting confusion, or voicing opinions. The data show that trust, peer rapport, and instructor openness

underpinned engagement, validating literature that positions dialogue as central to feedback literacy (Winstone & Carless, 2019).

#### *Developing Resilience and Confidence*

The third theme that emerged, centers on changes in students' emotional responses to feedback and their confidence in handling feedback situations – essentially, evidence of growing emotional resilience and self-assurance. Prior to the intervention, many students admitted to feelings of anxiety, fear of judgment, or discouragement when dealing with feedback. Following the intervention, students reported feeling emotional growth, describing how structured engagement with feedback reduced anxiety and built confidence. They articulated emotional regulation strategies such as "It's definitely put things in perspective... learning in more detail how feedback is essentially carried out" which highlights how repeated, scaffolded exposure desensitised fear and normalised critique. Importantly, students described shared vulnerability as a source of resilience suggesting that the social dimension of feedback was pivotal to overcoming emotional barriers (Pitt & Norton, 2017; Sutton, 2012). Another student described a transformation in their emotional stance toward critique: "Before, I was very scared to receive criticism... now I'm not afraid of someone telling me that I could have done this better." This progression reflects a fundamental shift from defensive to developmental engagement with feedback. Fear of criticism often signifies a fragile academic self-concept (Pitt & Norton, 2017), whereas the ability to accept and act upon critique indicates growth in resilience and confidence.

Another aspect of resilience is how students coped with critical feedback. In the focus group, participants discussed a scenario used in Activity 4 about receiving critical comments on an assignment. Comments like "It's made me use criticisms properly so that I can access what exactly I can use as a tool for growth." demonstrates how students adopted pausing and reappraising feedback as a strategy to shift focus from immediate reaction to actionable thoughts. This aligns with techniques often recommended in developing resilience – such as reframing a situation and focusing on control and action.

Additionally, several students noted pride in their ability to contribute useful comments to peers. Such experiences can be empowering; they shift a student's self-perception from someone who only receives help to someone who can provide help. This can bolster one's overall academic confidence and sense of belonging in a scholarly community. Another indicator of increased confidence was students' forward-looking statements about applying feedback. One student noted "I'm actually kind of looking forward to getting feedback on my next assignment because I want to see if I can spot the points for improvement and then actually work on them. Before I might have just ignored it. Before, feedback literacy for me just meant the major mistakes... after all of these activities... I realised my work can be looked at in different angles." Multiple students mentioned they felt prepared to face feedback in other modules because of this intervention and being able to confidently consider themselves to be feedback literate.

#### *Positive influence on academic identity and learning ownership*

A further notable outcome of the intervention was its influence on students' emerging sense of academic identity and ownership of learning. Several participants articulated that engaging with feedback in structured, dialogic, and reflective ways had not only improved their skills but also strengthened their self-concept as a 'university student'. One student captured this clearly stating "It's definitely increased my confidence in asking questions... it's motivated me to be more confident in my sense of identity." This statement suggests that feedback literacy development extended beyond procedural competence to a deeper ontological shift—students began to see themselves as active participants in academic dialogue

rather than passive recipients of instruction. The emphasis on “asking questions” signifies an increased willingness to engage critically with ideas and to position oneself as an agent within the learning process. The mention of a “sense of identity” implies an internalization of belonging within academic discourse (Winstone & Carless, 2019).

Furthermore, comments like “It’s definitely programmed me to push forward and do accurate research... paying attention to detail.” signifies how feedback literacy can reinforce academic rigour and ownership of learning outcomes. It conveys internal motivation and a self-sustaining drive to improve—traits associated with learner autonomy (Yan & Carless, 2021). It signals a movement toward self-regulation and accountability, where students not only respond to external input but proactively apply feedback principles to enhance the quality of their work. This demonstrates the developmental culmination of the feedback literacy activities helped students to begin to monitor and refine their own learning processes, exhibiting both learning ownership and academic identity.

The evaluation of this intervention indicates that the integration of GenAI-enabled feedback literacy activities was highly effective in achieving its aims. Students demonstrated marked improvement across the cognitive, affective, and behavioural dimensions of feedback literacy (Carless & Boud, 2018), showing enhanced understanding, emotional resilience, and proactive engagement with feedback. They learned not only about feedback but through feedback, internalising key principles such as dialogue, reflection, and feed-forward action (Molloy et al., 2020). The dialogic, participatory learning design proved crucial—how feedback literacy was taught mattered as much as what was taught. The active, supportive classroom culture increased engagement and motivation, confirming that dialogic pedagogies are powerful enablers of feedback uptake (Brown & Sambell, 2025). The generative AI component functioned primarily as an enabler to design scaffolded activities within a constrained timeframe, enriching learning materials and exemplars while allowing more time for dialogue and reflection; however, its effectiveness depended on human curation and facilitation. While the outcomes were overwhelmingly positive, the study’s small sample size and the dual teacher-researcher role limit generalisability. Future studies might employ longitudinal study design with mixed-methods approaches involving larger cohorts to triangulate findings. Nonetheless, the consistency and depth of qualitative responses, including evidence of emotional and behavioural change, offer strong confidence in the intervention’s impact that supports embedding feedback literacy as a dialogic, experiential process enhanced—but not defined—by AI, cultivating confident, self-regulating learners prepared for continuous improvement.

## Conclusion

This study presents a reflective analysis of an innovative pedagogical approach designed to support first-year students transitioning into higher education, combining the development of feedback literacy with the integration of generative AI tools. The findings demonstrate that even within a short timeframe, targeted interventions can profoundly influence how new undergraduates perceive and use feedback, transforming it from a source of uncertainty into a foundation for confidence, engagement, and self-regulated learning. By embedding feedback literacy activities early in the curriculum and enhancing them with Generative AI to simulate feedback and feedforward processes, students learned to view feedback as guidance rather than judgment, developed emotional resilience to criticism, and began taking active ownership of their academic growth. The use of generative AI proved a practical means of enriching pedagogy rather than replacing it. AI-enhanced feedback literacy activities that incorporate various stages of engaging with feedback expanded opportunities for dialogue and reflection, while teacher facilitation

and peer interaction remained central. This balance reiterates that effective learning design—not technology alone—drives impact. The intervention exemplifies how AI can augment evidence-based feedback practices by overcoming logistical barriers to providing varied examples and iterative opportunities for practice making academic conventions more transparent for first-year learners navigating the unfamiliar terrain of tertiary study.

## Recommendations

Beyond the immediate cohort, the study reinforces that teaching students how to learn from feedback is as crucial as teaching disciplinary content. Embedding feedback literacy early can foster long-term engagement, self-regulation, and confidence. For educators, this case provides a model for integrating AI ethically and purposefully within active learning frameworks. Outcomes suggest that explicitly teaching feedback literacy at the point of transition into university can accelerate students' sense of belonging and academic identity. The approach offers a scalable model for using AI-enhanced, dialogic pedagogy to build foundational learning habits that prepare students not just to succeed in their first year, but to thrive as independent, reflective learners throughout higher education. To consider implementing this approach to promote feedback literacy in first year students, it would be useful to understand the context within which students learn in a subject unit or a programme, what feedback and feed forward practices are in place and how generative AI could be integrated within good pedagogic practices to further enhance the impact of feedback on students' academic development and outcomes. It is also recommended that feedback literacy is seen as an integral aspect of employability skills development in students for its value in supporting transition to the professional world. Future research in this inquiry of practice could consider how we can leverage technologies such as Generative AI to design intentional and meaningful learning experiences in which students not only develop the dispositions and capabilities to prepare for the reflective, self-regulatory demands of both higher education and the contemporary workplace but develop feedback literacy as a transferable skill for lifelong learning by engaging critically with feedback — whether from peers, educators, or AI.

## Biography

*Nurun Nahar* is an Assistant Teaching Professor at Greater Manchester Business School. Her work focuses on the intersection of technology enhanced learning and student partnerships. Nurun led a whole institution collaborative project supporting AI and digital literacy skills development for all students including pre-arrival students in tertiary education, drawing on her expertise.

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