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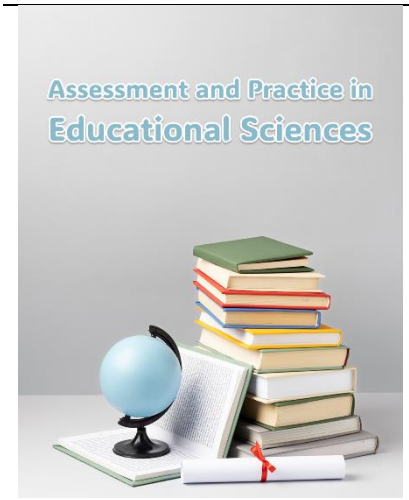

Identifying the Dimensions of Constructive Feedback in Formative Assessment Across Disciplines

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ABSTRACT

This study aimed to identify and explore the key dimensions of constructive feedback within formative assessment across academic disciplines in higher education. A qualitative research design was employed to capture instructors' lived experiences and insights regarding formative feedback practices. Nineteen university faculty members from diverse academic disciplines in Tehran were selected through purposive sampling. Data were collected via semi-structured interviews, each lasting 45 to 60 minutes. Interviews continued until theoretical saturation was reached. The transcribed data were analyzed thematically using NVivo software, following a multi-stage coding process consisting of open, axial, and selective coding to identify major themes and subthemes grounded in participants' narratives. Three major categories emerged: (1) Characteristics of Effective Feedback, including timeliness, clarity, personalization, balanced tone, alignment with objectives, constructive language, and varied delivery formats; (2) Disciplinary Variations in Feedback Practice, highlighting differences in process versus product focus, standards of rigor, feedback cultures, and criteria use across fields; and (3) Student Engagement with Feedback, revealing patterns in emotional responses, feedback literacy, dialogic interaction, peer review engagement, and uptake behavior. These dimensions were supported by rich qualitative data and exemplified with direct quotations from participants. The findings demonstrate that feedback practices are highly context-dependent, shaped by disciplinary norms and pedagogical beliefs. Constructive feedback in formative assessment is a complex, multidimensional process that requires sensitivity to disciplinary context, student emotional responses, and pedagogical intent. To be effective, feedback must go beyond transmission to foster dialogue, engagement, and reflection. These findings suggest the need for discipline-aware, student-centered feedback strategies that integrate clarity, timeliness, and relational sensitivity across all fields of study.

Keywords: Constructive feedback; formative assessment; higher education; qualitative research; disciplinary practices; feedback literacy; student engagement.

Introduction

Formative assessment is widely acknowledged as a pivotal element in enhancing student learning and promoting instructional responsiveness. Among the various components of formative assessment, constructive feedback stands out as a powerful tool that bridges the gap between current performance and desired learning outcomes (Hattie & Timperley, 2007). Constructive feedback not only informs students about their progress but also serves as a scaffold to help them regulate their own learning processes, correct misconceptions, and develop metacognitive strategies (Sadler, 1989). Despite its well-

documented significance, feedback often fails to achieve its intended purpose due to issues in delivery, reception, and contextual interpretation across educational disciplines (Carless & Boud, 2018).

The growing emphasis on student-centered pedagogies and reflective learning has intensified interest in the mechanisms and dimensions of effective feedback in higher education. Yet, a one-size-fits-all approach to feedback is increasingly being challenged, especially in light of diverse disciplinary cultures, varying assessment traditions, and heterogeneous student needs (Nicol & Macfarlane-Dick, 2006). In recent years, researchers have argued that feedback must be reconceptualized as a dialogic and situated practice rather than a unidirectional transmission of information from teacher to learner (Ajjawi & Boud, 2017). This shift calls for a deeper understanding of the characteristics, functions, and contextual determinants of feedback practices across disciplines, particularly in formative assessment settings where the primary goal is learning enhancement rather than judgment.

Research has shown that the effectiveness of feedback is contingent upon multiple factors, including its timeliness, clarity, relevance to learning objectives, and alignment with student expectations (Shute, 2008). Timely feedback allows learners to make meaningful revisions and prevents the reinforcement of errors (Gikandi, Morrow, & Davis, 2011). Clarity and specificity enable students to understand exactly what needs to be improved and how to do so, fostering self-regulated learning (Van der Kleij, Feskens, & Eggen, 2015). Moreover, feedback that is personalized and communicated with an appropriate tone can enhance student motivation, reduce anxiety, and promote a growth mindset (Ryan & Henderson, 2018).

While much of the literature has focused on general principles of effective feedback, less attention has been given to how these principles manifest differently across disciplines. Disciplinary contexts influence not only what is taught and how it is assessed, but also how feedback is constructed, delivered, and interpreted (Hyland, 2013). For instance, in scientific fields, feedback tends to emphasize accuracy, precision, and objectivity, whereas in the arts and humanities, feedback may focus more on interpretation, creativity, and process (Handley, Price, & Millar, 2011). These differences highlight the need for a more nuanced, context-sensitive understanding of feedback practices that takes into account the epistemological and pedagogical traditions of each field.

The concept of "feedback literacy" has also gained traction in recent discourse, drawing attention to students' abilities to understand, interpret, and use feedback effectively (Carless & Boud, 2018). Feedback literacy involves not only cognitive skills but also emotional and motivational factors, such as the willingness to engage with critique and the capacity to manage feelings of disappointment or defensiveness. Students' emotional responses to feedback can significantly shape how they process and act upon it (Jonsson, 2013). However, these responses are mediated by the way feedback is framed and the extent to which students are involved in the feedback process. Consequently, educators must be attuned to both the affective and cognitive dimensions of feedback when designing formative assessment strategies.

Moreover, the literature increasingly supports the idea that feedback should be dialogic rather than monologic (Nicol, 2010). Rather than being a terminal event following assessment, feedback should initiate an ongoing conversation between teachers and learners. This dialogic model positions feedback as a collaborative effort in which meaning is negotiated and learning is co-constructed (Winstone & Carless, 2019). Such an approach not only enhances student engagement but also aligns with contemporary views of assessment as an integral part of the learning process rather than a separate evaluative activity.

Another important development in feedback research is the integration of technology in feedback delivery. Digital platforms, learning management systems, and audio-visual tools have expanded the possibilities for feedback formats and timing. Several studies have demonstrated that students appreciate audio or video feedback for its personal tone and perceived clarity (Mahoney, Macfarlane, & Ajjawi, 2019). Technology also facilitates the scalability of feedback, allowing instructors to maintain quality while managing large class sizes. However, the effectiveness of digital feedback still hinges on the same

foundational principles—clarity, timeliness, and constructiveness—and must be embedded in pedagogical strategies that support student learning.

Despite the rich theoretical and empirical contributions to feedback literature, significant gaps remain in understanding how feedback functions within different academic disciplines and cultural contexts. Much of the existing research is based in Anglo-American settings, often neglecting perspectives from non-Western contexts, including Middle Eastern countries where educational structures, norms, and student-teacher relationships may differ (Zamanian, Alavi, & Moezi, 2021). In Iran, for example, hierarchical academic cultures, centralized curricula, and high-stakes assessment systems may influence how feedback is perceived and used by both instructors and students. A contextually grounded exploration is thus warranted to inform more culturally and disciplinarily responsive feedback practices.

Given these theoretical developments and research gaps, the present study seeks to identify the dimensions of constructive feedback in formative assessment across disciplines within Iranian higher education. By employing a qualitative research design and drawing on the lived experiences of university instructors from diverse academic fields, this study aims to uncover how feedback is conceptualized, delivered, and received in disciplinary contexts. Specifically, it explores the characteristics that constitute constructive feedback, the ways in which disciplinary norms shape feedback practices, and how students engage with the feedback they receive.

Understanding these dimensions is crucial not only for enhancing formative assessment but also for promoting equity and effectiveness in teaching across diverse fields. Constructive feedback is not merely an instructional tool; it is a pedagogical act that reflects values, expectations, and power dynamics embedded in academic cultures. Through this inquiry, we aim to contribute to a more holistic, evidence-informed framework for feedback practice—one that is attentive to both the general principles of effective pedagogy and the particularities of disciplinary and cultural contexts.

Methods and Materials

Study Design and Participants

This study employed a qualitative research design to explore the dimensions of constructive feedback in formative assessment across various academic disciplines. The qualitative approach was selected to enable an in-depth understanding of participants' lived experiences, perceptions, and contextual interpretations regarding feedback practices in formative assessment settings. The research was rooted in an interpretivist paradigm, emphasizing the subjective meanings individuals attach to their interactions within educational contexts.

Participants were selected using purposive sampling to ensure a diverse representation of educators from different academic disciplines including humanities, sciences, engineering, and social sciences. A total of 19 university instructors from institutions in Tehran participated in the study. Inclusion criteria required that participants have a minimum of three years of teaching experience and active involvement in formative assessment practices. Efforts were made to ensure diversity in gender, academic rank, and institutional affiliation to capture a broad spectrum of experiences and perspectives.

Data Collection

Data were collected through semi-structured, in-depth interviews conducted face-to-face. The interview protocol was designed to elicit participants' views on the nature, characteristics, functions, and challenges of providing constructive feedback within formative assessment processes. Key topics covered included the purpose of feedback, methods of delivery, student engagement with feedback, and disciplinary differences in feedback expectations.

Each interview lasted approximately 45 to 60 minutes and was audio-recorded with the informed consent of the participants. Interviews were conducted in Persian and later transcribed verbatim for analysis. Data collection continued until theoretical saturation was achieved—that is, the point at which no new themes or insights emerged from additional interviews, ensuring that the dataset was sufficiently rich and comprehensive for thematic interpretation.

Data analysis

The data were analyzed using thematic analysis with the support of NVivo qualitative data analysis software. Following transcription, the interview texts were read multiple times to achieve immersion and familiarity. Initial coding was conducted line by line to identify significant units of meaning. These open codes were then organized into categories through axial coding, and finally synthesized into overarching themes through selective coding. Patterns, commonalities, and divergences in participants' narratives were systematically explored to construct a grounded understanding of the dimensions of constructive feedback in formative assessment. Throughout the process, memo writing and peer debriefing were employed to ensure analytic rigor, transparency, and credibility.

Findings and Results

Category 1: Characteristics of Effective Feedback

Timeliness of Feedback.

Participants emphasized the critical role of providing feedback promptly during the learning process. Timely feedback was seen as essential for reinforcing learning and enabling students to adjust their performance. As one science instructor noted, "If feedback comes too late, it's almost meaningless—the moment to correct and improve is already gone." Participants reported using digital tools such as learning management systems to deliver instant or near-real-time responses, especially in large classes.

Clarity and Specificity.

Feedback that is vague or overly general was deemed ineffective across disciplines. Participants highlighted the need to use precise language and include concrete examples or criteria. An arts faculty member shared, "When I say 'your argument lacks depth,' I always follow it with what depth would look like in this context. Otherwise, they're lost." This clarity was linked to better student understanding and greater motivation to revise.

Balanced Tone.

Maintaining a balance between critique and encouragement was widely discussed. Constructive feedback was described as both honest and supportive, reducing defensiveness and fostering motivation. A social sciences lecturer explained, "I never sugarcoat, but I also don't crush their confidence. I highlight one strength before pointing out the gap." Many participants stressed the importance of tone in maintaining a productive teacher-student relationship.

Personalization.

Feedback tailored to the individual student's needs, background, and progress was viewed as more impactful. Teachers noted that when students feel recognized, they are more receptive. One humanities instructor remarked, "I mention how the feedback connects to their previous draft or effort. It shows I'm not just ticking a box." This approach was particularly relevant for diverse classrooms.

Consistency with Objectives.

Many participants argued that effective feedback must align with the course's learning objectives and the stated assessment criteria. When objectives and feedback are disconnected, students struggle to see the relevance. As an engineering educator said, "They ask: why does this comment matter? If I tie it to the rubric or learning goal, it makes sense to them."

Constructive Language.

Participants noted that the language of feedback should be forward-looking, descriptive rather than evaluative, and focused on improvement. Instead of labeling student work as “weak” or “poor,” many used phrases like “could be strengthened by…” or “next time, try…”. A participant explained, "I never say ‘bad.’ I say ‘let’s explore how this part could be clearer.’"

Medium of Delivery.

Teachers discussed the affordances and challenges of different feedback formats—oral, written, audio, or digital annotations. Preferences varied, but multimodal feedback was seen as increasingly valuable. A participant shared, "I record short audio clips on their PDFs. It feels more personal than red pen comments and students appreciate hearing my voice."

Category 2: Disciplinary Variations in Feedback Practice

Emphasis on Process vs. Product.

The orientation toward feedback differed significantly between fields. In the arts and humanities, process-oriented feedback was prevalent, whereas in engineering and sciences, outcomes and final products received more attention. As one design professor put it, "We critique the thinking and evolution, not just the final output." Meanwhile, a chemistry lecturer stated, "If the result is wrong, the method doesn't matter that much."

Standards of Rigor.

Expectations around accuracy, structure, and evidence varied. Participants explained that disciplines like physics demanded precision and exactness, whereas in literature or philosophy, argument nuance and originality were emphasized. "In engineering, feedback is about correctness; in philosophy, it's about clarity and depth," said one interdisciplinary educator.

Feedback Culture Norms.

Disciplinary traditions shaped how feedback was structured and delivered. In arts, group critiques were common; in the sciences, one-on-one or written comments were dominant. A participant from visual design described, "We do open critiques. Students learn to receive and give feedback in real time." Others noted that some departments discouraged peer feedback, while others institutionalized it.

Assessment Criteria.

Participants described a tension between standardized rubrics and subjective criteria. Quantitative disciplines leaned toward numeric rubrics, while qualitative ones allowed for interpretive flexibility. As a history professor stated, "Rubrics help, but too rigid and they restrict creative responses." This affected how feedback was framed and justified.

Terminology and Jargon.

The complexity and discipline-specific nature of feedback language were recurring themes. Students often struggled with jargon unless guided. An architecture teacher reflected, "They ask: what does 'formal balance' mean? I realized I needed to unpack our language when giving comments."

Feedback Frequency.

The number and timing of feedback episodes varied across fields. In project-based disciplines, ongoing checkpoints were common; others followed a midterm/final pattern. One biology instructor noted, "We give feedback only once or twice formally, unless students come for help." In contrast, creative writing faculty described iterative feedback across drafts.

Category 3: Student Engagement with Feedback

Feedback Uptake.

Participants reported varied student responses to feedback, ranging from passive reading to active incorporation. Many designed assignments to require revisions or reflections on feedback. A law professor shared, "I ask them to submit a memo on how they used my comments. It changes everything." This practice increased feedback utility.

Emotional Responses to Feedback.

Feedback was seen to evoke diverse emotional reactions—anxiety, disappointment, or motivation. Teachers highlighted the need for emotional sensitivity. A participant noted, "Some students interpret critique as failure, not opportunity. I have to reframe that for them constantly." Others used encouragement to buffer difficult messages.

Feedback Literacy.

Several instructors reported that students lacked the skills to interpret or act on feedback effectively. Initiatives like workshops or in-class modeling helped bridge this gap. One teacher said, "They didn't know what 'develop your argument' meant. I had to show examples, not just comment."

Dialogue and Follow-up.

Participants emphasized the value of creating opportunities for students to discuss feedback. Follow-up meetings, clarification emails, or even informal chats were cited as effective strategies. "If they talk to me about the comment, it becomes two-way, not top-down," said one sociology lecturer.

Peer Feedback Engagement.

Peer review was seen as both a learning tool and a challenge. Trust, quality, and accountability were key issues. A participant explained, "They sometimes ignore peer feedback, thinking it's not credible. We work to build that trust in the process." When structured and monitored, peer feedback improved engagement and critical thinking.

Discussion and Conclusion

This study explored the dimensions of constructive feedback in formative assessment across academic disciplines by analyzing the perspectives of 19 university instructors from various fields. Through thematic analysis, three overarching categories emerged: characteristics of effective feedback, disciplinary variations in feedback practices, and student engagement with feedback. These findings offer a multifaceted understanding of how feedback is perceived, delivered, and internalized in different disciplinary and pedagogical contexts.

The first key finding was the central importance of timeliness, clarity, tone, and personalization in feedback delivery. Participants emphasized that feedback loses much of its instructional value when delivered late, echoing earlier findings by Shute (2008), who argued that timely feedback promotes student retention and behavioral adjustment. Instructors also highlighted the necessity for clear, specific, and actionable comments—a principle strongly supported by Hattie and Timperley (2007), who proposed that effective feedback should answer three questions: Where am I going? How am I going? and Where to next? Participants' attention to the emotional tone and balance of feedback aligns with Ryan and Henderson's (2018) findings, which suggest that affective responses to feedback significantly influence student motivation and openness to improvement. Similarly, the emphasis on tailoring feedback to individual student progress and learning context resonates with Carless and Boud's (2018) notion of feedback literacy, which advocates for personalized, student-sensitive communication strategies.

Another significant contribution of the study lies in its uncovering of disciplinary nuances in feedback practices. Feedback was found to be shaped by field-specific epistemologies and pedagogical norms. For instance, arts and humanities instructors tended to focus on feedback as part of a developmental and interpretive process, while STEM instructors emphasized accuracy, product-oriented outcomes, and procedural correctness. This disciplinary divergence supports prior work by Handley, Price, and Millar (2011), who observed that feedback functions differently depending on the epistemological values of the discipline.

Hyland (2013) also emphasized that academic writing feedback is not merely about language use but is deeply embedded in the discourse conventions of specific disciplines. Furthermore, the use of different formats and timing—such as iterative group critiques in design education versus final assessment remarks in sciences—confirms Winstone and Carless's (2019) argument that feedback design must account for disciplinary context to be meaningful and effective.

Interestingly, participants also reported variation in how feedback cultures were enacted within institutional and departmental settings. Some disciplines institutionalized peer review and iterative dialogue, while others maintained more hierarchical, instructor-led feedback norms. This reflects Nicol and Macfarlane-Dick's (2006) claim that feedback is most effective when integrated into a learning environment that fosters autonomy and metacognitive reflection. Additionally, feedback criteria in qualitative fields were perceived as more fluid and open to interpretation, while quantitative disciplines employed standardized rubrics. These findings align with Bloxham and Boyd (2007), who noted that criteria-referenced assessment often masks deeper value-based judgments rooted in disciplinary traditions.

The third major theme concerned student engagement with feedback, particularly emotional reactions, interpretation skills, and follow-up actions. Instructors frequently mentioned that students exhibit anxiety, defensiveness, or confusion when faced with feedback, consistent with Jonsson's (2013) assertion that affective factors mediate feedback effectiveness. Participants reported that students often lacked the ability to interpret or act upon feedback without support, which underscores the importance of developing student feedback literacy as highlighted by Carless and Boud (2018). Furthermore, dialogic engagement—where feedback becomes a two-way exchange rather than a one-time transmission—was seen as an essential component in enhancing the efficacy of feedback. This finding supports Nicol's (2010) dialogic model, which emphasizes feedback as an interactive and iterative process, where students participate actively in making sense of teacher input.

Moreover, peer feedback engagement emerged as both a challenge and an opportunity. While many participants valued peer review for its potential to build evaluative judgment and critical thinking, concerns about trust, credibility, and quality were also prevalent. This dual perspective is reflected in studies such as Topping (2010), which found that peer assessment can enhance engagement and learning outcomes, provided that it is scaffolded and monitored. Participants in this study also emphasized the role of follow-up mechanisms—such as revision assignments or feedback reflection memos—which help close the feedback loop and foster deeper learning, in line with the reflective feedback model proposed by Boud and Molloy (2013).

Finally, the study revealed that technological tools are increasingly being used to facilitate feedback delivery across disciplines. Participants described the use of audio comments, annotated PDFs, and feedback platforms within learning management systems as strategies to provide richer and more personalized responses. These practices resonate with findings by Mahoney, Macfarlane, and Ajjawi (2019), who reported that students often perceive multimodal feedback—especially audio and video—as more engaging and understandable than traditional written feedback. However, participants also cautioned that technology is not a substitute for pedagogical intent; digital feedback must be purposefully integrated into the broader teaching and assessment design.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adheried in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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