

Exploring Corrective Feedback in Second Language Writing: A narrative Literature Review

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Amina Dabboub

Magda Giornazi

University of Zawia - Libya
d_amina1976@yahoo.com

Global University – Tripoli- Libya
Magda.giornazi@globaluni.edu.ly

Abstract

This literature review synthesises research on corrective feedback (CF) in second language (L2) writing, utilising theoretical frameworks and practical applications. Including 33 studies dated between 1996 and 2023, the review highlights key themes such as teacher cognition, student engagement, and feedback strategies, and technological advancement in feedback provision. In addition, methodological approaches, effectiveness of different types of feedback, and student-teacher interactions are explored to identify the complex dynamic of corrective feedback within diverse L2 contexts. The findings indicate that while CF has wide support in enhancing L2 accuracy, inconsistencies between teacher practices and student perceptions require further research so that pedagogical practices can be made to better align with learners needs. Some implications for future research and pedagogical strategies are provided in the conclusion.

Keywords: written corrective feedback, Second Language Writing, student engagement, teacher strategies

استكشاف المراجعة التصحيحية في اللغة الثانية: مراجعة ادبية

ماجدة الجرنزي

الجامعة العالمية - طرابلس، ليبيا

Magda.giornazi@globaluni.edu.ly

أمنية دبوب

جامعة الزاوية - ليبيا

d_amina1976@yahoo.com

الملخص

تقدم هذه المراجعة الادبية تحليلاً شاملاً للأبحاث المتعلقة بالمراجعة التصحيحية في الكتابة بلغة ثانية، مستندة الى اطر نظرية وتطبيقات عملية. تتضمن هذه الدراسة مراجع 33 دراسة تمت بين عامي 1996 و 2023، وتسلط الضوء على موضوعات رئيسية مثل إدراك المعلمين، تفاعل الطلاب، استراتيجيات المراجعة التصحيحية، والتقدم التكنولوجي في تقديم هذه المراجعة. بالإضافة الي ذلك، يتم استكشاف المنهجيات المتبعة، فاعلية الانواع المختلفة من المراجعة التصحيحية، والتفاعلات بين الطلاب والمعلمين لتوضيح الديناميكية المعقدة للمراجعة التصحيحية في سياقات اللغة الثانية المتنوعة. تشير النتائج الي انه على الرغم من الدعم الكبير الذي تحظى به المراجعة التصحيحية في تحسين دقة اللغة الثانية، فإن التباينات بين ممارسات المعلمين وتصورات الطلاب تستدعي المزيد من البحث لضمان توافق أفضل بين الممارسات التربوية واحتياجات المتعلمين. في خاتمة هذه الدراسة، يتم تقديم بعض التوصيات للبحوث المستقبلية والاستراتيجيات التربوية.

الكلمات المفتاحية: المراجعة التصحيحية الكتابية، الكتابة في اللغة الثانية، مشاركة الطلاب، استراتيجيات المعلم

1. Introduction

CF has been one of the major concerns in second language studies since it largely provides support for the processes of language acquisition and enhances accuracy of writing. The theoretical rationale for corrective feedback is essentially based on several approaches: the cognitive-interactionist approach, the sociocultural perspective, and complex dynamic systems (Ellis, 2010; Larsen-

Freeman, 2023, Vygotsky, 1098). These variously provide different perspectives regarding how, in general, feedback supports language learning. One important line of inquiry regarding how best to incorporate feedback into L2 writing pedagogy concerns the methods of CF provision, teachers' beliefs and actual classroom practice, and students' approaches to engaging with feedback (Bitchener and Ferris, 2012; Ferris, 2010; Mao and Lee, 2020). Early research, such as Truscott's 1996 critique of grammar correction effectiveness in the L2 writing classroom, elicited general debate and motivated researchers and teachers to determine, using empirical means, the pedagogical value of CF. More recently, a body of literature has emerged which has attempted to establish more fine-grained understandings of the conditions under which CF is effective, and how it can be differentiated and tailored to meet the diverse needs of L2 learners.

Despite the considerable attention given to CF, there remain a number of controversies and unresolved issues regarding, especially its implementation and the effectiveness that is still highly variable. Some researchers also advocate for focused CF, which is directed at specific error types, while others consider comprehensive CF approaches, dealing with multiple errors at the same time, as better alternatives (Lee, 2019; Rahimi, 2021). Besides, variations in teacher cognition-that is, the teachers' beliefs, knowledge, and contextual contemplations-further complicate the application of CF strategies in classroom settings (Borg, 2003; Chen, 2022). Cognition of teachers influences not only the way the feedback is given, but also how students themselves view and consider their feedback and respond to it (Borg, 2006; Mao and Crosthwaite, 2019). The distance between teachers' and students' expectations, with regard to feedback, or the meeting of such expectations, has been seen to play a very crucial role in the effectiveness of CF. This, therefore, calls for an in-depth understanding of these dynamics as a sure way of refining L2 feedback practices (Ferris, 2010; Lee, 2009).

In addition to teacher cognition, another crucial aspect that has emerged as a critical determinant in the success of the feedback

intervention is student engagement in CF (Han and Hyland, 2015). Engagement referred to the activities in which students responded to and used the feedback, besides their feelings in relation to the feedback received, motivation, and predispositions on the revision based on the feedback given (Han, 2017; Hyland, 2003; Yu et al., 2019). Since these factors appear together and interplay in multifarious ways, the need has been argued for by researchers in the adoption of a holistic view on CF regarding both cognitive and affective aspects of learning (Ellis, 2010; Mao and Lee, 2023). This universal stance is necessary to understand why some students benefit from CF more than others, and what particular conditions or scaffolding are necessary in order for the most to be made from it.

Recent technological innovation has also considerably changed the way CF is both provided and received; it opens up new opportunities as well as posing new challenges for teachers and learners alike (Zhang and Hyland, 2018). It has also integrated automated feedback systems into L2 classrooms, such as automated essay scoring (AES) and computer-mediated communication tools, to supplement traditional feedback practices (Dikli and Bleyle, 2014; Pearson, 2022). Whereas these tools offer some potential advantages related to timeliness of feedback and increased consistency, concerns also arise about loss of personal interaction and contextual sensitivity that human-delivered feedback can provide (Mohsen, 2022). As technologies continue to drive educational practice, it is imperative that researchers and educators alike consider pedagogical implications for the tools that are being developed and subsequently implement those tools in ways that foster meaningful learning.

The present review intends to conduct a systematic analysis of the research findings on CF in L2 writing, along four major dimensions: (1) types and effectiveness of CF strategies, (2) teacher cognition and beliefs about feedback, (3) student engagement with CF, and (4) technological advancement in the provision of feedback. The review synthesises findings from key studies and makes a number of suggestions concerning the ways in

which corrective feedback impacts L2 writing development and recommendations concerning future research. To this end, it identifies significant lacunae in the existing knowledge about CF, calling for context-sensitive approaches that are theoretically sound as well as pedagogically relevant in mainstream L2 classes.

Research Objectives and Contributions

It thus attempts to synthesise and critically assess the diverse research findings on CF regarding identifying effective practices and outlining areas where more empirical evidence is required. Specifically, the review attempts to answer the following questions:

What type of CF has proven most effective in guiding L2 writing accuracy and under what circumstances?

How do teacher cognition and contextual factors shape the provision and receipt of CF?

What is the role of factors in mediating students' engagement with CF, and how might engagement be increased?

To what extent, and with what limitations, can technological tools be exploited to support the more traditional use of CF?

By answering these questions, this review gives a state-of-the-art overview of CF in L2 writing and a basis for further research on how to improve CF practices in different educational settings. This review also aims to bridge the gap between research and practice by informing feedback intervention design and supporting feedback literacy development by both teachers and students.

2. Theoretical Frameworks and Key Concepts

2.1 Corrective feedback in Second Language Writing

Corrective feedback, defined by Ellis (2010) as any response that indicates to the learner that their language output contains errors, has been widely researched in L2 writing studies because it should help improve language acquisition and facilitate linguistic accuracy. This conceptualisation of CF encompasses everything

from direct and indirect feedback to metalinguistic explanations and focused versus comprehensive feedback. Researchers have long attempted not only to investigate its efficacy (Bitchener and Storch, 2016; Ferris, 2010) but also the cognitive and social mechanisms that underpin exactly how CF functions in diverse educational contexts. This has also been informed by various theoretical frameworks, among which included the cognitive-interactionist framework that was postulated by Long in the year 1996; sociocultural theory (Vygotsky, 1978); and complex dynamic systems theory (Larsen-Freeman, 2023). Each of the frameworks brings a different perspective on the way in which CF interacts with learner cognition, social dynamics, and the broader learning environment.

Cognitive-Interactionist Perspective

From the cognitive-interactionist perspective, CF is viewed as a type of input that advances noticing, underlining certain linguistic forms that are deviant to norms of the target language, as well as reconducting learners' attention to them. The cognitive-interactionist model, which loosely emanates from Long's (1996) interaction hypothesis, maintains that CF favours language learning by providing learners with an opportunity to notice the gap in their interlanguage system. According to Schmidt (2001), noticing is believed to be a necessary precursor to any learning. Corrective feedback therefore raises the learners' conscious awareness of errors, which then provoke cognitive restructuring and eventually correct forms are incorporated into their interlanguage. This process is most clear in direct CF, whose explicit correction of learners' errors thus yields immediate and tangible revisions in writing on the part of the latter (Bitchener and Ferris, 2012).

Empirical research has mostly supported this cognitive-interactionist position by showing that CF improves L2 writing accuracy, especially when the feedback provided is explicit and related to specific linguistic features (Kang and Han, 2015). It has also been recorded that direct and metalinguistic CF is generally more helpful for the learners compared to indirect CF or no CF,

due to the fact that the explicit nature of feedback aids in understanding the appropriate usage of the linguistic forms (Bitchener and Storch, 2016). However, indirect CF, which merely gives clues or underlines the existence of an error without the provision of the correct form, often has its effectiveness filtered through learner proficiency levels and their capacities for self-regulation and hypothesis testing (Hyland, 2003; Rahimi, 2021).

Sociocultural Theory

By contrast, sociocultural theory (Vygotsky, 1978) classifies CF as a mediational tool operating within the learner's zone of proximal development (ZPD)-that gap between what a learner can do independently and what they are able to do with support. This theory suggests that language learning is a social construction, and CF is a scaffolding device for developing learners' current capabilities through guided interaction (Han and Hyland, 2019). From this perspective, the effectiveness of CF does not depend exclusively upon the learner's cognitive processes but is determined by the nature of the social interaction between the learner and the feedback provider-teacher, peer, or technology.

CF, in that case, works as a collaborative tool, promoting dialogic interaction and negotiation of meaning (Lantolf and Thorne, 2006). This perspective is therefore applied in research on peer feedback and teacher-student conferences, centring the way that feedback is co-constituted through the dialogue of both parties, thereby giving the opportunity for the learners to be meaningfully involved in the process of feedback (Yu and Liu, 2021; Zhang and Hyland, 2018). For example, Han and Hyland (2015) observed in one study that feedback was more productively taken up and retained when it was delivered via a dialogic approach-where students were invited to question and discuss it-since such an approach encourages deeper cognitive and emotional engagement. This was in line with Vygotsky's view that learning is essentially social and mediated through language; therefore, CF has the best effect when used within meaningful interaction.

One of the critical consequences of this sociocultural perspective is the emphasis on sensitivity to context, in which feedback should be differentiated based on the learner's ZPD. In other words, this theory posits that CF varies in its effectiveness, depending on the specific needs and stage of development of a particular learner, which requires differentiated feedback from a teacher calibrated to match the self-regulation capability and problem-solving capability of each learner independently (Lee, 2019). It thus contradicts the cognitive-interactionist approach, which, in support of standardized practices, calls for adaptive and dynamic feedback strategies responsive to emerging learner needs.

Complex Dynamic Systems Theory

Of late, the complex dynamic systems theory has taken a centre-stage position in research on CF. This theory propounds a non-linear, emergent, and context-sensitive nature of language development (Larsen-Freeman, 2023). Whereas traditional conceptions provide for the notion of CF as a unitary intervention known to yield predictable results (CDST) conceives of language learning as an outcome of a complex interplay involving multiple, interrelated variables, such as learner motivation, proficiency level, and the particular instructional context. From this perspective, CF is not a single, invariant treatment but rather a dynamic process interacting with an ever-changing constellation of learner and contextual factors.

The influence of CF in a complexity dynamic systems theory framework is understood as unpredictable and strongly individualised: Different learners respond to the same feedback differently because of their unique histories, emotional states, and external influences (Larsen-Freeman, 2016). This perspective insists that feedback should be context-sensitive, chiming with particular characteristics of each learner, and be part of a more integral system of instructional support. For example, Mao and Lee (2022) explored how individual students in the same classroom may have highly variable feedback uptake, moderated by individual prior learning experiences, attitude to feedback as

individuals, and individual classroom dynamics shaping engagement and performance.

Moreover, CDST challenges the conventional understanding on the concept of effectiveness in CF research by highlighting the fact that the efficacy of CF may manifest itself over time, not being immediately apparent, but rather as learners' interlanguage systems develop in due course. According to this view, measures of CF effectiveness that have traditionally been based on short-term rates of change—the immediate post-test gains, for example—cannot, by definition, capture the long-term developmental impact of feedback (Han, 2019). Thus, CDST-informed research requires longitudinal designs and the adoption of qualitative methods to follow intricate paths of learners' reactions to feedback for lengthy durations of time (e.g., Ellis 2010, Mao and Lee 2023).

The Integration of Theoretical Perspectives

All three of these theoretical perspectives has something to say about CF's nature and its relation to L2 writing development. While the cognitive-interactionist perspective focuses on explicitness and draws attention to form, the sociocultural theory emphasises the social aspects of feedback and contextualisation. Meanwhile, CDST provides a detailed understanding of how multiple, interacting variables influence CF outcomes. All these together emphasise the multi-faceted nature of CF and the necessity for contextually grounded and learner-centred approaches that are aware of the complex realities of L2 classrooms.

2.2 Concepts Student Engagement and Teacher Cognition

The influences of CF on the second language learners cannot be comprehended without close attention to two crucial concepts: that of student engagement and teacher cognition. These concepts provide a great avenue through which an individual is able to learn how the feedback is perceived, processed, and acted upon in educational settings. In fact, the relation between CF and language development is not solely a function of the feedback itself but is deeply influenced by how students engage with the feedback and

how teachers conceptualise and deliver it within the classroom context (Hyland, 2003; Borg, 2003). Examination of these constructs provides a fuller understanding of the variables mediating effectiveness of CF and informs development of feedback practices for productive learning.

Student Engagement with Feedback

Engagement, in that regard, has been defined as the degree at which learners observe, respond to, and make use of feedback by teachers or peers in CF (Hyland, 2003; Han and Hyland, 2015). It is a multidimensional concept that involves three major aspects, including cognitive, behavioural, and affective engagement (Fredricks et al., 2004). Cognitive engagement, in other words, is the degree of mental effort learners invest in comprehending and incorporating feedback into their writing. Deep processing of feedback, reflective thought, and the ability to make revisions, grounded in metalinguistic understanding, are hallmarks of high levels of cognitive engagement (Storch, 2010). Indeed, studies have found that when learners are cognitively engaged, they are more likely to sustain writing accuracy improvement (Han, 2017).

Behavioural engagement with this process, however, refers to those observable actions that learners display in reaction to the feedback, such as revising their drafts, seeking clarification, or actively participating in the feedback discussions (Han and Hyland, 2019). Behavioural engagement has often been used to indicate students' motivation and willingness to act on the feedback they receive. However, the degree of engagement can be strongly influenced by a number of factors: for example, the type of feedback-direct or indirect-whether comments are clear, and whether feedback is perceived as relevant to learners' goals (Busse, 2013; Rahimi, 2021).

Affective engagement involves learners' emotional reactions toward feedback, which may range from positive feelings like motivation or satisfaction to negative ones such as anxiety, frustration, or even resistance toward the feedback itself (Han and Hyland, 2015). Affective responses are of utmost importance

because they relate to whether students perceive feedback as an enabling method in learning or as a channel of criticism. Positive feelings relate to higher motivation and full engagement, while negative ones may disengage students and make them unwilling to revise their work (Yu et al., 2019).

Studies have shown that the nature of student engagement with CF is underpinned by complex influences of factors that range from learner motivation and language proficiency to the nature of feedback in itself (Zheng et al., 2023; Zhang et al., 2012). For example, learners with high motivation tend to be cognitively and behaviourally more engaged, even when the feedback is challenging to deal with (Papi et al., 2020). A similar role again is that of learner proficiency: Lower-proficiency students have mainly a problem in decoding indirect CF; hence, they may need more explicit guidance and scaffolding to use the feedback (Zhang et al., 2021). Affective factors comprising students' past experiences with feedback, their self-efficacy beliefs, and their attitudes toward the teacher mediate how they process and act upon feedback (Han and Hyland, 2019).

Student engagement with feedback is determined by the extent to which they perceive the feedback to be meaningful and relevant to their learning goals. As observed, students are most likely to engage with feedback when they see its purpose and when their expectations of the feedback match what they have received (Zheng et al., 2023). In contrast, when the feedback is perceived to be vague, too judgmental, or irrelevant to the learners' goals, the engagement is lower (Han, 2017). For that reason, developing feedback literacy-a feature of being able to understand and make judicious use of feedback-is considered a promising way to encourage full engagement with active enhancement of feedback use (Carless & Boud, 2018).

Teacher Cognition and Feedback Practices

More specifically, in the context of corrective feedback, teacher cognition is defined as the assumptions that underlie teachers' conceptions of the nature of language learning, the place of

feedback in L2 development, and of their own responsibilities as teachers. This has been viewed as one of the most significant factors shaping how CF is conceptualised and enacted in L2 classrooms (Borg, 2003). These in turn influence the kind of feedback provided, its mode of delivery, and the expectations set by the teachers for the student's engagement with feedback given (Borg, 2006; Chen, 2022).

Research into teacher cognition has repeatedly shown that teachers hold a variety of often-incongruent beliefs about feedback. While some teachers concentrate on giving elaborate CF for a wide collection of errors in student writing, believing that this is indeed the way to use for improvement in general accuracy (Ferris, 2010). Others who believe in focused CF where only a few error types are targeted so that students do not get overwhelmed and as a means toward efficient learning (Lee, 2019). These conflicting beliefs often reflect a broader pedagogical orientation, such as a focus on form (accuracy) versus meaning (fluency and coherence) (Borg, 2006).

Despite the centrality of these beliefs, empirical studies have evidenced a persistent mismatch between teachers' beliefs and their actual feedback practices (Mao and Crosthwaite, 2019; Lee, 2009). For instance, while teachers profess a belief in the need to differentiate feedback in response to the unique needs of each learner, in practice, driven by time pressures, large class sizes, and lack of professional development, they continue to provide standardised, one-size-fits-all feedback methods. Although many teachers feel that corrective feedback on content and organisation is as important to write as the one focusing on grammatical errors, their actual feedback practices often tend toward surface corrections because of perceived student expectations and institutional pressures (Lee, 2011; Junqueira and Payant, 2015).

Other critical factors influencing teacher cognition come from the contextual perspective. Institutional policies, curricular imperatives, and cultural expectations about the role of feedback serve to either support or constrain teachers' capability to put their

beliefs into practice. For example, in contexts where achieving high scores in exams is highly emphasised, it may be felt by teachers that they have little option but to devote a major share of time to error correction in order to enable students to obtain higher scores, even when personally they may value the holistic kind of feedback (Mao and Crosthwaite, 2019).

Interplay between student engagement and teacher cognition

In the process of feedback around student engagement, student engagement and teacher cognition interact in a dynamic way and influence the general effect of CF significantly. As far as teachers are concerned, feedback is delivered depending on their beliefs and practices. By the same feature, the responses from and engagement by students are affected (Ferris, 2012). Lack of correspondence of expectations between a teacher and his or her students results in poor engagement and even resistance to feedback on the part of the latter (Lee, 2009; Zhang et al., 2021). For example, if the teacher considers grammatical correction important but the students believe improving content and coherence is what really matters, then such feedback would be irrelevant to students and uptake chances decreased (Busse, 2013).

It thus requires the establishment of congruence between teachers' intentions and students' perceptions for effective CF. It has been determined that enhancing communication and making the purposes and expectations of feedback more transparent can bridge the gap and substantially increase student engagement (Mao and Lee, 2023). Equally, professional development training on developing teachers' feedback literacy can help teachers refine their practices to better match their beliefs and respond to the needs of students (Carless and Boud, 2018).

3. Research into Trends and Evolution of Corrective Feedback in L2 Writing

The research into corrective feedback in L2 writing has been highly progressive during the last couple of decades, reflecting changes in theoretical perspective, in pedagogical approach, and in empirical methodology. It has moved from a narrow error

correction and grammatical accuracy in earlier approaches to more holistic and sensitive approaches with consideration for the cognitive, social, and emotional dimensions of the process in which language is learned (Ferris, 2010; Mao and Lee, 2022). Early CF studies, particularly those following Truscott's (1996) seminal critique on grammar correction, fostered debates about the effectiveness of CF for L2 writing development. On the other hand, Truscott argued that CF, particularly grammar, had barely any impact on L2 accuracy and did more harm than good as it discourages learners and makes them concern themselves with surface revisions. The radical shift of this claim of his-that grammar correction is rather unessential-from the prevailing view at the time encouraged a series of studies testing empirically the effectiveness of CF for L2 writing. (Truscott, 1996; Truscott, 2007).

These were, however, opposed by scholars such as Ferris (1999, 2004, 2010), who rebutted the arguments of Truscott and were able to provide evidence that CF, if provided systematically with pedagogical intent, can result in improved L2 writing accuracy. Ferris's studies emphasised the need to differentiate between the types of feedback delivered-for example, direct versus indirect, focused versus comprehensive-and individual learner differences in designing interventions for CF. Longitudinal studies eventually began to reveal the likelihood of success with CF, especially when it coincided with the learners' stage of development and when feedback was delivered in a manner that invited involvement and reflection on the part of the learner (Bitchener and Ferris, 2012; Bitchener and Storch, 2016).

Another development in research on CF has been a more pronounced turn towards sociocultural theories and complex dynamic systems perspectives (Han and Hyland, 2019; Larsen-Freeman, 2023). These approaches view CF not as a discrete form-focused intervention, but an emergent interaction created in the larger learning environment. This paradigm shift has brought into being the articulation of more subtle research themes that take into account the affective, social, and contextual dimensions of

feedback, thus extending the scope of CF research from the traditional error correction perspective.

3.1 Development of Research Themes in CF

Recent studies have pointed out that it is significant to distinguish a number of CF strategies and explore the differential effects of these strategies on learners. Another important line of investigation has been the distinction between direct and indirect CF, examining how each type may impact language development variously about learner proficiency, task complexity, or the nature of the error produced (Ellis, 2010; Rahimi, 2021). Direct CF, in which the correct form is provided, has been found more effective with beginner learners or in cases of error types so complex that students cannot self-correct themselves (Ferris, 2010; Bitchener and Storch, 2016). On the other hand, indirect CF, which only indicates errors without giving a correct form, has been considered more cognitively engaging and deeper in processing, especially for intermediate to advanced learners (Hyland, 2003; Han, 2017).

Besides differences in type, there has also been research into scope: e.g., focused versus comprehensive feedback. While comprehensive CF addresses several error types simultaneously, focused CF, targeting a small set of errors, leads to rather greater long-term learning gains. Large meta-analyses such as Kang and Han's (2015), have quantitatively synthesised findings identifying which strategies are most effective under what conditions, hence yielding more fine-grained insights into the effectiveness of CF for L2 writing development.

Qualitative research further complements these findings through an examination of the experiences and perceptions of teachers and students in diverse instructional contexts (Han, 2019; Junqueira and Payant, 2015). Through these studies, it has equally become clear that the actual effectiveness of CF depends not only on the feedback type but also on interpersonal dynamics between teachers and students, clarity and specificity of feedback, and perceived supportiveness or criticalness of feedback given (Han and Hyland, 2019; Mao and Crosthwaite, 2019). This line of inquiry has

centred on how not only what feedback is given but also how it is given and how it is received.

Another key trend in recent CF research has been the study of differential responding to feedback. Learner motivation, self-efficacy, cultural background, and proficiency level have all been identified as mediating factors in learners' responses to feedback, affecting both immediate revisions and longer-term language development (Zheng et al., 2023; Zhang et al., 2021). Understanding individual differences is thus imperative for tailoring feedback interventions to learners' needs and encouraging persistent engagement with feedback.

3.2 Emerging Themes: Engagement and Feedback Literacy

Among the most salient recent emerging themes in CF research is an emphasis on student engagement and feedback literacy. Engagement, as defined in the previous section, is the extent to which learners engage in active processing and acting upon feedback. This construct has increasingly captured the interest of scholars who, with time, came to understand that it is not the providing of CF alone that is enough to foster learning, but rather learners need to understand, internalise, and meaningfully exploit the feedback (Han and Hyland, 2015). Engagement is multidimensional and complex: It entailed not only cognitive processing but also emotional and motivational dimensions (Han, 2017).

More recent research has placed emphasis on the development of feedback literacy for both teachers and students. According to Carless and Boud (2018), feedback literacy encompasses being able to understand what the purposes of feedback, being able to interpret feedback messages, and to do something with feedback in the service of one's learning. It involves knowledge, skills, and disposition to empower learners to take an active role in the feedback process rather than being passive recipients of information (Carless and Boud, 2018; Han and Xu, 2021). The concept of feedback literacy has shifted the focus from a teacher-centred approach to feedback delivery to a learner-centred

approach to feedback engagement and emphasised the role of dialogical feedback practices that may engage students in the co-construction of their learning experiences (Carless and Boud, 2018; Mao and Lee, 2023).

Research into feedback literacy has shown that the peer development of these competencies considerably extends the potential of CF. In other words, feedback literacy for teachers involves not only knowing how to give clear and actionable feedback but also creating learning environments supportive of learning engagement and encouraging students to take ownership of their learning (Han and Xu, 2021; Lee, 2017). For students, feedback literacy involves such things as interpreting messages of feedback, seeking clarification, and then incorporating feedback into subsequent drafts (Carless and Boud, 2018).

It has also been pointed out that developing feedback literacy requires a shift in instructional behaviour from the traditional transmissionism view of feedback to an interactive and student-centred view (Zhang and Hyland, 2018) through peer feedback, self-assessment, and teacher-student conferences (Han and Xu, 2021), which can offer students proactive opportunities to engage with feedback. Mao and Lee (2023) noticed that feedback literacy development is a long process that requires continuous support and practice opportunities; therefore, this is viewed as a key direction in the future research and pedagogical innovation.

3.3 Technology-Enhanced Feedback: New Directions and Challenges

Another growth in this area is technology-enhanced feedback integrated within the instruction in L2 writing. Feedback delivery and reception have, however, been changing with the rise in the use of automated essay scoring (AES), computer-mediated communication tools, and learning management systems (Pearson, 2022; Zhang and Hyland, 2018). While these tools do have several benefits in terms of immediacy, scalability, and consistency, they pose some issues at the expense of personalisation, lack of

contextual sensitivity, and finally overdependence on automated correction suggestions (Dikli and Bleyle, 2014; Mohsen, 2022).

Further research is required in this area, since current investigations are at their infancy stage, and such a line of inquiry will investigate the pedagogical implications of digital feedback and how it might be used effectively in combination with traditional teacher-mediated feedback to offer hybrid models of feedback that maximise the benefits of both approaches (Mao and Lee, 2022). With the constantly evolving technology, the application of artificial intelligence and natural language processing in the delivery of complex feedback, sensitive to context, and in tune with L2 learners' varied needs, beckons future research. That is, future research should be informed by how artificial intelligence and natural language processing can be used to support more contextualized and nuanced feedback that caters to the diverse needs of L2 learners (Zhang and Hyland, 2018).

4. Types and Strategies of Written Corrective Feedback

Corrective feedback in L2 writing is a multi-faceted construct that can be distinguished typologically, if not fundamentally, by its focus, mode of delivery, time of presentation, and source of provision, among other dimensions (Ellis, 2010; Ferris, 2012). Based on the characteristics and functions of CF, several conceptual frameworks have been developed that allow greater levels of awareness with regard to how different forms of feedback interface with learner variables and instructional contexts (Bitchener and Ferris, 2012; Mao and Lee, 2022). The distinction between focused versus comprehensive feedback, direct versus indirect feedback, and considerations of timing (immediate versus delayed) are crucial in understanding the varied effects of CF on L2 writing development. In light of this, Ferris (2012) and Rahimi (2021) review several distinctions in the nature of CF which provide valuable insights into its complex impact on L2 writing development.

Each one of these strategies of CF has different implications for language learning and affects accuracy, fluency, and general

writing development differently. However, for example, targeted CF, which addresses only a limited set of errors in any given session-in other words, just verb tense or the use of articles-has been found to provide better long-term linguistic gains than whole CF, addressing a wide array of errors all at once (Lee, Luo, and Mak, 2021a; Mao and Lee, 2022). Furthermore, studies show that the delivery method, direct or indirect, and the timing, immediate or delayed are two most important variables that shape up students' processing and internalisation of CF significantly (Ellis, 2010). Such variables need to be carefully measured in interventions on CF so that they become compatible and appropriate with the learners' development and the instructional objectives.

4.1 Direct vs. Indirect Corrective Feedback

Of all the aspects researched into CF types, the difference that direct and indirect CF perhaps presents is one of the most striking contrasts. Direct CF is provided as the correct form against the learners' erroneous output. It is thus explicit, straightforward feedback in that through it, the learner can see and understand the correct linguistic form immediately (Ferris, 2012). It involves crossing out wrong words or phrases and putting correct ones in their place, and it is especially effective for low-proficiency learners, since they may lack the linguistic resources to self-correct their error (Bitchener and Storch, 2016). For that reason, direct CF has been considered more apt for less salient or complex errors, such as verb tense or article use errors, when learners are unable to self-correct without explicit guidance provided by the teacher. Ellis cautions that it might be difficult for teachers to provide indirect corrective feedback for every single error due to time constraints and the large class size of many educational institutions. In this regard, it is recommended to keep records of individual student errors in a profile or log (Ellis, 2010). Although direct CF was found to produce an immediate gain in writing accuracy, especially in controlled conditions, its long-term effectiveness is less certain (Kang and Han, 2015). Critics also argue that direct CF can lead to surface changes rather than any deeper cognitive processing of the language rule in question (Truscott, 2007). This can make learners

reliant on the teacher's corrections, with the learner failing to notice and self-edit similar errors when writing independently on another project (Ferris, 2010).

The indirect CF, however only signals that an error is present but does not give the correct form. It can include underlining, circling, or placing a symbol-any mark will do, such as a question mark-near the error to enable the learner to identify and correct the mistake themselves (Ferris, 2012). Indirect CF is seen as an indication of deeper cognitive involvement because it necessitates the learners engaging in problem-solving and reflecting on their language use (Hyland, 2003). This kind of feedback is very often favoured for more advanced learners because they possess the linguistic and metalinguistic skills to locate and self-correct their errors themselves (Han, 2019). Indeed, comparative research on direct versus indirect CF has produced mixed results, which indicates that the relative effectiveness of the respective strategies depends on variables such as learner proficiency, error type, and instructional context (Ferris, 2012; Zhang et al., 2021). For example, Zhang et al. (2021) found indirect CF yielded better long-term retention and transfer of grammatical knowledge in the case of intermediate-level learners. However, in the case of a direct CF for lower proficiency learners, the former was more effective since it is given in an explicit form of the correct. In addition, the type of error to be corrected plays a role, as well: indirect CF may be effective for simpler, rule-based errors, such as subject-verb agreement errors, but less effective in the case of complex syntactic structures (Han, 2019).

4.2 Focused vs. Comprehensive Corrective Feedback

One of the important distinctions that has been made in the research on CF is between focused and comprehensive feedback. While focused CF concerns a certain subset of errors, such as verb tenses or article use, comprehensive CF regards all the errors in learners' writings regardless of type (Ellis, 2010). According to Lee (2019), a wide range of linguists advance focused CF because it permits learners to focus on acquiring certain linguistic features without being overwhelmed. Research has demonstrated that

focused CF is more effective in terms of actual accuracy in the linguistic feature that has been targeted and, over time, leading to more robust learning (Bitchener and Ferris, 2012). On the other hand, comprehensive CF presents more global feedback on the writing of the learner but sometimes risks overloading learners, particularly those at low proficiency levels (Ferris, 2012). This could be frustrating or perplexing for learners when they receive too much feedback at one time in several aspects, which lowers their capability to prioritise the revisions and damages their engagement (Lee, 2019; Rahimi, 2021). Despite such possible disadvantages, some researchers indicate that comprehensive CF is necessary in those contexts where the aim is to develop learners' overall writing proficiency and linguistic competence (Lee, Luo, and Mak, 2021a). Therefore, the challenge is finding a balance between breadth and depth of CF so that feedback can be comprehensive while focused enough to support meaningful learning (Ferris, 2012).

4.3 Timing of Corrective Feedback: Immediate vs. Delayed Feedback

One of the most important ways in which CF timing has been conceptualised in the L2 classroom is in terms of the provision of feedback being either immediate or delayed. The timing of CF- either immediately after the error event or delayed until a later point in time- is a factor with significant consequences for the effectiveness of CF in promoting L2 development (Ellis, 2010). It provides immediate CF either in real time or soon after the learner's production, to which learners can relate directly and thus associate the feedback to their output. This is especially the case when oral CF contexts and synchronous writing tasks are concerned, where such immediacy can help learners notice and self-correct before the onset of error fossilisation (Li, 2017).

However, in written CF contexts, delayed feedback- after the learner has finished a draft- may enable more reflective processing as learners can reflect upon their overall performance and consider the feedback under less pressurising conditions. According to Han (2017), delayed feedback is likely to facilitate more long-term

retention and transfer of knowledge because it may prompt greater metalinguistic reflection (Ellis, 2010).

4.4 Technology-Enhanced Feedback

Recent developments in technology have introduced newer modes of CF delivery including automated essay scoring (AES), computer-mediated communication, and digital annotation tools. These tools are consequently reimagining conventional feedback practices by offering newer opportunities for scalable, consistent, and timely feedback (Mohsen, 2022; Pearson, 2022b). AES systems, like Grammarly and Criterion, give immediate feedback regarding grammar, mechanics, and style that allows learners to see immediate suggestions concerning their writing and make changes on the spot (Zhang and Hyland, 2018). Over the last decade, there has been an increasing use of automated writing evaluation tools, such as Grammarly and Criterion, within writing classes.

Even as these tools come with great advantages in terms of lessening teachers' workloads and bringing about immediate corrective input, concerns also arise with respect to quality and contextual appropriateness of feedback. Fully automated systems lack the ability to consider issues like content, organisation, and coherence and cannot make fine-grained explanations that meet the needs of learners at an individual level (Dikli and Bleyle, 2014). Such technologies overemphasise lower-order errors in reinforcing that narrow view where writing is treated as much more form-oriented rather than oriented with meaningful substance (Zhang and Hyland, 2022).

In this respect, an examination of these limitations has prompted researchers to call for hybrid feedback models that use technology-mediated feedback in combination with human feedback, each capitalising on the strengths of both approaches (Mao and Lee, 2022). For instance, AES tools can be used to provide first feedback on grammar and mechanics, freeing up teachers to focus on higher-order feedback relating to content and organisation. Therefore, an integrated approach can ensure that learners receive

comprehensive and sensitive feedback to context to support their overall writing development (Zhang and Hyland, 2018).

4.5 Peer and Collaborative Feedback

Another strategy that lately draws much attention is using peer feedback and collaborative feedback practices. Peer feedback has been defined as a process where the learner gives feedback to their colleagues, usually through structured activities guided to assess their peers' work against specified criteria (Yu and Lee, 2015). This is supported by the sociocultural theory which stresses learning as a socially mediated process (Vygotsky, 1978). Other scholars have also suggested that peer review encourages more autonomous learning, increases metacognitive awareness, and embeds greater levels of learner engagement, since students are required to reflect critically on both their own and their peers' writing (Han and Hyland, 2019).

Collaborative feedback, which emanates from various corners like teacher, peers, and self, has also been seen to offer a more holistic learning experience (Yu and Liu, 2021). The diversified perspective embedded in collaborative feedback enables learners to combine strengths and weaknesses for deepening self-awareness and hence achieves more comprehensive views toward writing development (Zhang and Hyland, 2022).

Each corrective feedback strategy carries some unique advantages and challenges: direct and indirect, technology-enhanced, and collaborative-all must be weighed with learners' developmentally relevant needs, proficiency levels, and instructional contexts. Understanding nuances is critical to the design of feedback interventions that support the effective L2 writing development.

5. Teaching Implications and Future Research Directions

The understanding derived from corrective feedback studies has significant implications for teaching and future research into L2 writing contexts. The effectiveness of CF depends on various factors, including alignment between teacher belief and student expectation, development of feedback literacy, and integration of

technology in ways that support human feedback and do not substitute for it (Ferris, 2022). By contrast, CF variable such as all these must be considered in developing a holistic optimisation of the CF practices so that it is targeted to address not only linguistic errors but also to promote learner autonomy and engage with metacognitive awareness.

5.1 Alignment of Teacher Beliefs and Student Expectations

A recurring story in CF research is that teacher beliefs and student expectations about feedback sometimes clash and act as a barrier to making CF function successfully in the L2 classroom (Mao and Crosthwaite, 2019; Lee, 2019). For example, teachers may feel that they are providing great assistance by giving copious feedback in detail, while students may feel overwhelmed or discouraged by such feedback, which leads to their disengagement (Chen, 2022). Contrarily, when students expect more comprehensive feedback than what teachers can give them, they will perceive the given feedback as less or superficial, therefore making it less effective to that end. -this would likely lead students to view given feedback as less superficial, therefore decreasing its effectiveness (Han, 2019).

For that, the educators really need to create an atmosphere of openness about feedback practices, and engaging the students themselves in co-construction of feedback goals will help bridge the gap (Mao and Lee, 2023). This approach emanates from the concept of feedback literacy, which concerns the approach where both teachers and students are involved in a mutual process of building and working out shared purposes, expectations, and uses of feedback together (Carless and Boud, 2018). In practice, such strategies would concern discussing with students their preferences for receiving feedback, using feedback rubrics that make criteria and expectations very clear, and conducting feedback workshops to train the students in the interpretation and use of feedback (Han and Xu, 2021).

Moreover, teacher professional development programs should provide opportunities for reflective practices which would enable teachers to critically evaluate their beliefs about feedback and,

thus, develop new teaching practices better meeting the student needs (Ferris and Hedgcock, 2023). By fostering collaboration among teachers through dialogue with colleagues and observation of peers in order to seek new perspectives about the feedback and explore strategies for enhancing the alignment of the feedback (Lee, 2011).

5.2 Development of Feedback Literacy for Teachers and Students

Recently, feedback literacy has received growing interest as one of the critical driving forces behind CF's efficacy. It involves knowledge of the feedback purposes, interpretation of the message being received, and motivation along with skills needed to put them into practice in one's learning itself (Carless and Boud, 2018). It is equally important that feedback literacy will not only arm the student but also the teacher with the wherewithal with which they can engage in feedback productively (Han and Xu, 2021).

In respect of students, feedback literacy can be improved by explicit instruction on using feedback, self-assessment activities, and peer review sessions that encourage deeper engagement with the feedback. Yu and Lee (2015) argue that practice for students in giving and receiving feedback can demystify the process of feedback and take away some ownership in learning (Zhang and Hyland, 2018).

From a teaching perspective, feedback literacy includes instruction on how to design feedback that is clear, actionable, and related to learning objectives. In that respect, it considers students' perception and response to received feedback for teachers to make modifications in their approaches to meet the needs and preferences of students (Lee, Luo, and Mak, 2021b). Therefore, there is a dire need to develop professional programs that enhance teachers' competencies in giving context-sensitive and learner-sensitive feedback (Carless and Boud, 2018).

5.3 Technology Integration in Feedback Practices

Technological advances have brought new possibilities for delivering CF, but their introduction needs to be handled sensitively so that such innovations complement and do not supplant traditional feedback practices (Pearson, 2022; Zhang and Hyland, 2018). Automated feedback tools, such as Grammarly and Criterion, can now deliver immediate feedback on lower-order matters of grammar and mechanics, leaving the instructor with more time to devote to higher-order matters concerning content, organisation, and coherence (Mohsen, 2022).

However, technology-mediated feedback is not without its own limitations. Automated systems may fail to capture nuances of learner errors and are generally less effective in developing complex issues related to argumentation, style, and rhetorical strategies (Dikli and Bleyle, 2014; Zhang and Hyland, 2022). For determined benefits from technology-enhanced feedback, educators should consider the blended feedback approach, incorporating human and automated feedback. In a similar line of thought, this approach has also been realised with the AES tool providing preliminary feedback on surface errors while instructor or peer feedback addresses more sophisticated aspects of writing (Mao and Lee, 2022).

Furthermore, research should be furthered in order to widen the possibilities of using innovative technologies, such as artificial intelligence (AI) and natural language processing (NLP, within the framing of context-sensitive feedback with regard for individual needs. Further investigations on the use of AI to analyse discourse-level features and provide content and coherence feedback are promising (Mohsen, 2022).

5.4 Addressing Individual Differences and Contextual Factors

One of the future avenues of research is into how the differences in individuals and contextual factors impact the efficiency of CF. Factors such as the learner's proficiency, motivation, cognitive styles, and cultural backgrounds may seriously influence students' perception and response to feedback itself (Zheng et al., 2023;

Zhang et al., 2021). For example, Busse (2013) mentioned that learners from different cultural backgrounds may have different expectations about the directness and tone of feedback, hence making different effects on student engagement and uptake. Individual differences in self-regulation and feedback-seeking behaviour, however, might mediate learners' reactions to various types of feedback given to them (Papi et al., 2020).

The contribution of such variables needs to be factored in in any context-sensitive approach to future research, adopting a mixed-methods design with attention to the complex interplay between cognitive, affective, and contextual factors (Ellis, 2010). There is also a need for longitudinal studies tracing learners' engagement over time with feedback to provide a look at the longitudinal developmental impacts of different CF strategies (Han, 2019).

Moreover, there is a need to establish how contextual factors like institutional policies, class sizes, and curriculum goals play a role in understanding how feedback practices are to be adjusted to suit various educational settings (Mao and Crosthwaite, 2019). Research that specifically explores how CF is adopted in online or blended learning environments given the rise in usage of digital platforms for language teaching and assessment (Pearson, 2022).

6. Conclusion

Even though corrective feedback is still one of the essential pedagogical tools for L2 writing, it is both complex and contextual. The shifting research on CF calls for contextually grounded and learner-centred approaches that take into account individual differences, feedback literacy, and the integration of technology. The identified gaps and improvement in feedback literacy would facilitate a more meaningful engagement of students and improved learning outcomes. This will involve optimising the CF practices by aligning teacher beliefs with student expectations, judicious use of technology, and developing feedback literacy. Further research into these issues in future studies will yield more flexible, responsive, and sustainable

feedback strategies to support diverse learners in achieving their goals of language learning.

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