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Learner engagement with written corrective feedback in ESL and EFL contexts: a qualitative research synthesis using a perception-based framework

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ABSTRACT

Although research on the efficacy of written corrective feedback has received considerable attention in recent years, there is a dearth of research on learner engagement with written corrective feedback. Understanding how language learners engage with written corrective feedback is high on the agenda of feedback research because it provides a broadened perspective that feedback uptake is only one form of engagement, and that engagement with written corrective feedback is influenced by myriad contextual and individual factors. To narrow the research gap, this qualitative research synthesis examines learner engagement with written corrective feedback in English writing contexts through the lens of ecological systems theory and a perception-based framework. Focusing on 14 articles, relevant information was extracted and synthesised following three iterative stages informed by grounded theory to identify common engagement patterns and clarify relationships between factors affecting how learners engage with written corrective feedback. The results reveal the dynamic, contextualised and individualised nature of learner engagement with written corrective feedback. Pedagogical implications for practitioners are discussed to address the lingering issues around learner engagement with written corrective feedback.

KEYWORDS

Written corrective feedback; learner engagement; qualitative research synthesis; ecological systems theory

Introduction

In foreign/second language writing research, one of the most widely researched topics is feedback, specifically written corrective feedback which refers to language teachers' written comments on various areas in students' writing, especially grammatical errors. The past two decades have witnessed a considerable body of research on written corrective feedback due to Truscott's (1996) and Ferris's (1999) debate over its efficacy. Popular interest in written corrective feedback research since 2000 has been primarily quasi-experimental studies that investigated efficacy of written corrective feedback (e.g. Shintani and Ellis 2013). These studies garnered empirical evidence that there are considerable benefits of written corrective feedback.

However, researchers tend to be divergent over which type of written corrective feedback is more effective. Ferris (2006) indicated that indirect written corrective feedback (implicit correction of language errors) works better, while Bitchener and Knoch (2009) found that direct written corrective feedback (explicit indication and correction of language errors) is more effective. These

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findings raise a new concern over the ecological validity of written corrective feedback studies. Ferris (2010) argued that researchers have focused on limited types of grammatical features such as articles (a, an), which is in contrast to how most language teachers give feedback (Lee 2019). Moreover, the investigation of written corrective feedback efficacy limits the scope of research to writing outputs but does not provide answers to how written corrective feedback works, to what degree and why. The research focus warrants a shift from examining efficacy of written corrective feedback to exploring students' perceptions (Bitchener and Storch 2016; Storch 2018).

A theoretical framework to investigate learner engagement with written corrective feedback was absent in the literature until Ellis (2010) proposed his corrective feedback engagement framework. Compared with empirical written corrective feedback research, a relatively small number of studies have examined how and why learners engage with written corrective feedback in specific contexts. Several qualitative studies adopt a multiple case-study approach to explore learner experience with and uptake of written corrective feedback (Ferris et al. 2013; Han 2019). Yet these case studies have been restricted in sample size and revealed only a small piece of the puzzle. These studies tend to describe learner engagement as complex and multifaceted yet lack the ability to take the how and why questions further. Current written corrective feedback research has only scratched the surface concerning the influences of learner and contextual variables in shaping learner engagement.

To address the need to systematically accumulate qualitative research evidence on learner engagement with written corrective feedback, research syntheses, or systematic literature reviews, can be conducted. Research synthesis is defined as a "protocol-driven and quality-focused approach" to consolidate research evidence to inform research and practice (Bearman et al. 2012, p. 625). To the knowledge of the authors, only a handful of research syntheses on written corrective feedback have been published. For instance, Chong (2019a) synthesised empirical studies on written corrective feedback, whereas Mao and Lee (2020) synthesised written corrective feedback research methodologies. There is no research synthesis which investigates the multifaceted construct of learner engagement vis-a-vis written corrective feedback in a systematic manner. Addressing this gap could add value to current scholarship and practice of written corrective feedback in English-as-a-Second-Language and English-as-a-Foreign-Language writing classrooms. A qualitative research synthesis on learner engagement with written corrective feedback was conducted to explore both independent and joint factors in shaping learner engagement. This review is guided by the following research questions (RQs):

RQ1. How do students engage with teacher written corrective feedback cognitively, behaviourally and affectively?

RQ2. What learner factors and contextual factors interact to shape learner engagement with written corrective feedback?

Literature review

Quasi-experimental studies on written corrective feedback

Quasi-experimental studies aim to examine the efficacy of written corrective feedback practices. Their samples contain a control group and a treatment group. The earlier studies contain a pre-test and only one post-test, but this immediate post-test has little bearing on the long-term impact of written corrective feedback on learners' grammatical accuracy (e.g. Hartshorn et al.2010). To address this gap in research design, more recent studies introduce a delayed post-test or longitudinal test (e.g. Bitchener and Knoch 2010; Ene and Kosobucki 2016). Another limitation of quasi-experimental studies is that they target a restrictive set of language errors, focusing mostly on such word-level errors as definite and indefinite articles (Sheen 2007) or prepositions (Sheen, Wright, and Moldawa 2009). Only a handful of studies address sentence-level errors (e.g. hypothetical conditional in

Shintani and Ellis 2015). This line of written corrective feedback research generally affirms its short-term effectiveness, especially when compared to when no feedback is provided.

Qualitative studies on written corrective feedback

Qualitative studies on written corrective feedback collected data from multiple sources, ranging from classroom observation, feedback, interviews and surveys (e.g. Al Shahrani and Storch 2014). These studies are usually conducted at a smaller scale (e.g. a case study) than their quasi-experimental counterpart. They utilise several sources to triangulate evidence to describe and interpret learners' and teachers' experiences with written corrective feedback. Lee (2008), for example, supplements interviews with observations, and considers teaching style as a variable affecting learners' written corrective feedback engagement. Although the above studies have focused on variables external to learners (e.g. teachers' feedback practices, teachers' beliefs), few qualitative studies have investigated individual learner differences and their impact on written corrective feedback engagement.

Qualitative findings have shown a mismatch between teachers' beliefs and their written corrective feedback practices (e.g. Junqueira and Payant 2015; Lee 2013). Another mismatch resides in the difference between students' and teachers' perceptions. Teachers' efforts to implement comprehensive written corrective feedback show their professional competence and diligence from school leaders' and administrators' perspectives (Lee 2019), but it is not necessarily preferred from the learners' perspective (Han and Hyland 2015). A contextualised account of engagement is needed to explain these mismatches in written corrective feedback qualitative findings. Therefore, learner engagement with written corrective feedback should not be understood through a single lens of written corrective feedback types (Han and Hyland 2015). To advance future studies, this review attempts to unravel, through a multi-faceted perspective, patterns of interactions between individual and contextual factors related to written corrective feedback engagement in 14 primary studies.

Research syntheses on written corrective feedback

In the past decade, methodological rigour and ecological validity have been heatedly debated in written corrective feedback research (Ferris 2010). This debate calls for alternative methods to research. Based on the mushrooming of primary studies, research syntheses have been placed in the limelight as a parallel line of research (e.g. Kang and Han 2015; Li and Vuono 2019).

One typical and prevalent type of research synthesis is meta-analysis. Meta-analysis aggregates findings of quasi-experimental datasets. Kang and Han (2015) synthesise effect sizes of 22 studies and conclude that written corrective feedback improves L2 writing accuracy, and that focused feedback is usually more useful than comprehensive feedback. Methodological synthesis focuses on the research designs and methodologies used to research a particular topic (Chong and Reinders 2021). Liu and Brown (2015) analysed 51 empirical studies on written corrective feedback to identify methodology limitations, including the lack of learner variables and inconsistency in outcome measures. Other types of research syntheses on written corrective feedback include scoping review (Mao and Lee 2020) and systematic review (Chong 2019a). The scoping review conducted by Mao and Lee (2020) synthesises not only quantitative but also qualitative data to provide a broad-brush depiction of the state-of-the-art of written corrective feedback research, especially in relation to its efficacy. A similar attempt was made by Chong (2019a) in his systematic review using text-mining technology. These studies illustrate the potential of aggregating research evidence to shed light on under-researched aspects of written corrective feedback research and suggest future research directions. No research syntheses on written corrective feedback have focused on summarising qualitative research evidence in relation to learner engagement. This review aims to address this gap.

A perception-based conceptual framework

The conceptual framework used in the present review is informed by two feedback engagement frameworks by Ellis (2010) and Chong (2021). Ellis's (2010) framework involves three dimensions: engagement, context, individual. There are three kinds of learner engagement with written corrective feedback: affective, behavioural and cognitive. The cognitive perspective can be explored by looking at students' awareness of error patterns and learners' perceived value of written corrective feedback. The affective perspective focuses on learners' emotions, values and attitudes towards written corrective feedback. The behavioural perspective is examined based on learners' uptake or revisions prompted by written corrective feedback. Ellis (2010) framework has been used in recent studies. Zheng and Yu (2018), for example, shows that behavioural and cognitive factors can interact with affective factors to influence learners' feedback engagement. Multiple aspects of the individual dimensions have been highlighted such as individual learners' abilities and willingness towards direct and indirect feedback (Han and Hyland 2015). Learners' understanding of written corrective feedback and revisions are examined as individual variables to explain how learners process feedback cognitively and behaviourally (Bitchener and Ferris 2012).

However, little is known about how contextual dimensions impact learner engagement with written corrective feedback. Ellis (2010) three engagement dimensions are reminiscent to the notion of student feedback literacy, which refers to students' capacity and disposition to engagement meaningfully with feedback (Carless and Boud 2018; Gravett 2022; Chong 2021). In their seminal work, Carless and Boud (2018) presents three forms of feedback engagement that feedback literate students need to possess: understanding and appreciating feedback (cognitive engagement), evaluating quality of work based on feedback (cognitive engagement), and handling criticisms and other negative emotions in the feedback process (affective engagement).

Informed by ecological systems theory (Bronfenbrenner 1979; Neal and Neal 2013), Chong (2021) attempts to explore the mechanism behind Ellis's (2010) engagement dimension and postulates that learners' cognitive, behavioural and emotional engagement with feedback is jointly mediated by myriads of contextual and individual factors. Chong's (2021) framework identifies four layers of context: textual (e.g. written corrective feedback), interpersonal (e.g. teacher-learner relationship), instructional (e.g. curriculum materials) and sociocultural (e.g. educational system). Individual variables discussed in Chong's model are: learners' beliefs (e.g. beliefs about value of feedback), goals (e.g. language learning goals), experiences (e.g. feedback-related experiences) and abilities (e.g. language proficiency). Based on these two frameworks, we propose a perception-based framework which serves as an analytical lens to synthesise findings from the included studies (Table 1).

Methodology

Qualitative research synthesis

Research synthesis, also known as systematic literature review, is an academic genre of a written review, aimed at answering a set of research questions (Ellis 2015). In language education literature, research synthesis can be broadly divided into two categories: *traditional* and *systematic* (Norris and Ortega 2007). Traditional review includes, for example, narrative review and critical review (Chong and Plonsky 2021a). However, since traditional review does not explicitly detail its search strategy or synthesis procedure, it is difficult for researchers to assess the quality of the included articles and the synthesised results. With this in mind, we have decided to select research synthesis as the methodology because it includes transparent search protocols and has the potential to bridge the research-practice divide in written corrective feedback research (Chong, Lin, and Chen 2022).

Qualitative research synthesis is a type of research synthesis that focuses on qualitative findings and follows a set of explicit rigour procedures (Chong and Plonsky 2021b). It aims to

The perception-based framework	Origin	
1. Engagement dimension	Ellis (2010)	
Behavioural		
Emotion/affective		
Cognitive		
2. Individual dimensions (learner factors)	Chong (2021)	
 Prior experience with written corrective feedback 		
Linguistic ability		
Beliefs and goals		
3. Contextual dimensions (contextual factors)	Chong (2021)	
3.1. Micro-classroom context		
Ø written corrective feedback features		
Ø Material support other than written corrective feedback		
Ø Human support other than written corrective feedback		
3.2. Macro-educational context		
Ø Sociocultural influences		

 Table 1. A perception-based framework on learners' engagement with written corrective feedback.

systematically identify, appraise and synthesise all relevant research on a given topic (Petticrew and Roberts 2005, p. 9). Systematicity and rigour in the review process differentiates qualitative research synthesis from traditional reviews (e.g. narrative reviews), as exemplified in its extensive literature search, criterion-based inclusion checklist and study appraisal mechanism (Cook, Mulrow, and Haynes 1997). The inclusive nature of the data, selected based on replicable criteria, lays the foundation for a more impartial and evidence-based summary of findings.

Methodological framework

The methodological framework for conducting this synthesis on written corrective feedback research is adapted from the framework proposed by Chong et al. (2021b). This methodological framework is chosen because it is the most recent and the only framework on qualitative research synthesis known to the authors in the field. Adapted from Chong and Plonsky (2021b), four steps were carried out to retrieve and analyse qualitative studies.

- 1. **Design research questions:** The research questions were developed to explore contextual and individual factors shaping learner engagement with written corrective feedback.
- 2. Conduct literature search: The search strings include the following terms: "written corrective feedback" AND "teacher" AND "(engagement OR motivation OR involvement OR participation OR preference OR belief OR experience)". Since we intend to report the latest development of written corrective feedback research, we decided to focus on primary studies published in the past five years (2017-2021). Qualitative research syntheses published in esteemed journals in our field also have a similar search window (e.g., Çiftçi and Savaş 2018 focused on publications between 2010 and 2015). A focused search was performed on the websites of six publishers, namely Oxford University Press, Elsevier, Taylor & Francis, Wiley, Sage, Cambridge University Press. The included journals are listed in Table 2, involving 12 major international refereed journals. We decided to only focus on those top-tiered journals that have a rigorous peer review process in place. We acknowledge that it is a limitation of our review. The included journals are justified by the inclusion criteria (Table 3). Although four journals (1, 5, 7 and 12 in Table 2) are relevant to English-as-a-Second-Language/English-as-a-Foreign-Language, only articles on oral, peer and automated corrective feedback appeared in the search results. Therefore, we decided to exclude these four journals in the review because the scope of this synthesis is on teacher written corrective feedback, the most vibrant area of feedback research in language education research. A snowballing technique was employed by

	Journal	JIF quartile	Average JIF percentile	JIF Without self-citation
1	Applied Linguistics	N/A	99.741	5.531
2	Assessing Writing	Q2	67.931	1.824
3	Assessment & Evaluation in Higher Education	Q1	93.75	3.595
4	Journal of English for Academic Purposes	Q1	62.205	2.11
5	ELT Journal	Q1	62.856	1.847
6	Language Teaching Research	Q1	89.560	3.449
7	Language Learning	Q1	93.815	3.787
8	Journal of Second Language Writing	Q1	94.041	3.115
9	TESOL Quarterly	Q1	87.785	3.473
10	System	Q1	83.460	2.801
11	Teaching in Higher Education	Q1	71.02	2.411
12	Studies in Second Language Acquisition	Q1	96.114	2.524

Table 2. Journals included in the qualitative research synthesis.

Note: "JIF" stands for Journal Impact Factor.

browsing the reference lists of the articles included in our preliminary search to identify additional articles whose titles differ from the search string (Chong and Reinders 2021).

- 3. Evaluate literature using inclusion and exclusion criteria: Inclusion and exclusion standards were used to conduct two screenings on articles generated from the search. Both the relevance and quality of the searched literature were assessed. The first step was relevance screening: The first author roughly skimmed the titles, keywords and abstracts to check the articles' relevance to the research questions. The second step was quality screening, involving reading parts of the articles (e.g., the methodology section) to determine rigour of the study (Table 3). A search result comprising 335 articles was reviewed, and 14 articles were included for further coding. The number of included studies is comparable to those in qualitative research synthesis published in reputable journals in the field of language education (e.g., Chong and Reinders 2020 include 16 studies). Bibliographical information on the 14 included studies is included in the references indicated by asterisks.
- 4. Extract and synthesize qualitative data: Guided by the two research questions, qualitative findings pertaining to factors affecting learners' engagement with written corrective feedback were extracted from the included articles. Findings were extracted and synthesised using grounded theory methodology (Charmaz 2006). The first phase is initial coding, which involves extracting relevant findings in their original wordings onto a form with specific references to page numbers. After reading and selecting relevant data repeatedly, sentences were labelled to form initial codes. In the second phase, focused coding involves multiple rounds of labelling codes, classifying related codes and grouping codes, grounded on the iterative comparison of initial data, and informed by our conceptual framework (Table 1). Finally, axial coding was performed to unravel relationships between codes.

Findings and discussion

Research question 1: How do students engage with teacher written corrective feedback cognitively, behaviourally and affectively?

Through the lens of our perception-based framework, this section will focus on students' behavioural (evident in 14 studies), cognitive (evident in eight studies), and affective (evident in five studies) engagement with teacher written corrective feedback (Table 4).

Behavioural engagement

Revision (19 references in 14 studies) and learner strategies (10 references in 6 studies) represent how ESL and EFL learners typically engage with written corrective feedback behaviourally. As shown in Table 4, the number of revision references is almost twice as many as those of learning

Criteria			Include		Exclude
Relevance	Participants of studies	•	English language learners	•	Learners learning languages other than English
	Year of publication	•	2017-2021	•	Before 2017
	Context	•	EFL or ESL writing class	•	English-as-a-first language ESL/EFL Listening, reading, speaking class
	Focus of research	•	Corrective feedback in written mode Teachers' feedback	•	Other modes of corrective feedback (e.g., oral/audio/video corrective feedback) Other sources of written corrective feedback (e.g., peer feedback, automated feedback)
	Type of publication	•	Primary studies	•	Reviews, editorials, commentaries, theoretical papers
Quality	Journal		Disciplines are restricted to language education, applied linguistics, second language acquisition and higher education Journal Impact Factor (JIF) without self-citation in 2021 higher than 1.8 Average JIF Percentile higher than 60 JIF Quartile = Q1 Double-blind peer review		Academic disciplines other than the four mentioned JIF without self-citation in 2021 lower than 1.8 Average JIF Percentile lower than 60 JIF Quartile lower than Q1 No evidence of peer review
	Rigour	• •	Qualitative studies conducted in line with TESOL Quarterly guidelines Literature review explicitly discusses the construct of 'learner engagement with written corrective feedback' or its alternative terms Findings focusing on learner experience, perception, and/or belief	•	Qualitative studies not conducted according to the guidelines Literature review that does not explicitly discuss the theoretical lens of 'learner engagement with written corrective feedback' or its alternative terms Findings on efficacy of written corrective feedback

Table 3. Inclusion and exclusion criteria.

strategies; however, a closer examination of the latter reveals a rich repertoire of learning strategies employed by learners: memorisation and read-aloud (Han2017), visualisation (Kim and Bowles 2019) and taking error notes (Han and Xu 2019).

From the findings, learners engage with written corrective feedback behaviourally to different depths. Deep behavioural engagement is demonstrated when learners seek external sources, employ learning strategies and make extensive revisions to improve their writing (Zheng and Yu 2018; Han and Hyland 2019). Conversely, owing to limited self-regulation, some learners only partially engage with teacher written corrective feedback by revising surface language errors through deletion or minimal self-editing effort yet avoiding complex errors (Zheng and Yu 2018; Han 2019; Han and Hyland 2019). Other partially engaged learners are willing to invest self-editing efforts but only revise selectively due to disagreement with teachers' written corrective feedback (Han 2017). Learners who engage minimally with teacher written corrective feedback only react to overt corrections and delegate technical revision to automatic writing evaluation tools. However, they discard written corrective feedback that demands a comparatively high level of cognitive processing (Zheng and Yu 2018; Han and Yu 2018; Han and Hyland 2019); Kim and Bowles 2019; Yu, Jiang, and Zhou 2020).

Cognitive engagement

The findings reveal multiple ways learners engage with teacher written corrective feedback cognitively. Our analysis shows two recurring themes: cognitive effort to understand (16 references in eight studies) and attention to errors (six references in five studies).

Explicitness and clarity facilitate understanding of written corrective feedback and errors. Deciphering the meaning behind feedback occurs as learners attempt to understand its value (Han 2019) and make sense of its information (Kim and Emeliyanova 2021). The former is related to learners' beliefs, whereas the latter requires linguistic competence and metacognitive

Characteristic		Frequency of code	Cited Studies	The number o studies
Behaviour	Revision	19	All studies	14
engagement	Learning strategies	10	Han and Xu (2019); Han (2017); Zheng, Yu, and Liu (2020); Kim and Bowles (2019); Han (2019); Chong (2019b)	6
Cognitive engagement	Mental effort to decipher and understand written corrective feedback	16	Chong (2019b); Han and Hyland (2019); Han (2019); Han and Xu (2019); Zheng and Yu (2018); Han (2017); Kim and Emeliyanova (2021); Lee, Luo, and Mak (2021)	8
	Attention to errors	6	Han (2019); Han and Xu (2019); Han (2017); Zhang (2021); Kim and Bowles (2019)	5
Affective engagement	Emotions (e.g. anxiety, pessimism, appreciation)	12	Chong (2019b); Han and Hyland (2019); Han (2017); Han and Xu (2019); Zheng, Yu, and Liu (2020)	5

Table 4. An	overview	of the	three	engagement	dimensions.
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knowledge (e.g. Coyle and Roca De Larios 2020). For example, low-proficiency learners may benefit more if they receive metalinguistic written corrective feedback (error correction that includes explanations of language features or grammar rules) about the cause of their errors or about how to modify them. In contrast, low achievers fail to decipher coded and indirect feedback (error correction that is not indicated and/or corrected directly) due to limited understanding of feedback cues (Zheng and Yu 2018). On the other hand, learners' attention to errors is related to the clarity or explicitness of feedback. For instance, four studies indicated that direct and mid-focused feedback (that focuses on a moderate number of language errors) causes less confusion than indirect and comprehensive feedback (that focuses on all language errors implicitly) (Zheng and Yu 2018; Kim and Bowles 2019; Yu, Jiang, and Zhou 2020; Lee, Luo, and Mak 2021). Kim and Bowles (2019) found that learners employing think-aloud strategies exhibit two levels of cognitive processing: noticing without providing a reason and noticing with a reason.

Affective engagement

Affective engagement (12 references in five studies) is defined as students' emotional and psychological reactions to written corrective feedback (e.g. Zheng and Yu 2018; Han and Hyland, 2019). Our synthesis shows that learners display mixed emotions upon receiving written corrective feedback (Zheng and Yu 2018). Positive emotions documented in the studies involve curiosity, satisfaction, awe, gratitude and positivity (Han and Hyland 2019). On the contrary, negative emotions include boredom and pessimism, anxiety (Han 2017), disinterest (Han and Xu 2019) and negativity (Zheng, Yu, and Liu 2020). Zheng and Yu (2018) reveal that students feel frustrated when they cannot close the feedback loop due to limited revision time and low L2 proficiency level. It is important to note that positive emotions do not necessarily facilitate revision based on written corrective feedback and vice versa. A learner can still manage to revise, albeit with guilt and anxiety (e.g. the student Jia in Han and Hyland 2019), whereas others demonstrate curiosity to improve but only correct explicitly identified errors due to minimal understanding of feedback codes (e.g. Han 2017). Han and Hyland (2019) highlight that learners' affective engagement should be viewed on a dynamic and fluid continuum rather than a dichotomy. For instance, Du (a student in Han and Hyland 2019) was initially curious about written corrective feedback and admired her teacher, thus enhancing her motivation to self-edit errors. But when she focused solely on errors, she eventually became less responsive to feedback.

RQ2. What learner factors and contextual factors interact to shape learner engagement with written corrective feedback?

The 14 studies reveal a fluid and dynamic relationship between learner variables and context variables in shaping learner engagement with written corrective feedback (see online supplementary materials). Three recurring themes emerged: (a) the malleable nature of learner factors and contextual factors; (b) alignment between learner and contextual factors in fostering deep engagement with feedback, (c) unfavorable learner and contextual factors and their misalignment in hindering learner engagement. Overall, it is noticeable that, to foster a desirable engagement with teacher feedback, at least one favourable factor is required in both context and individual variables, while surface engagement or disengagement is a product of one unfavourable element either in contextual or individual factors. For instance, one demotivating factor (e.g. learner's belief derived from self-sabotage in Yu, Jiang, and Zhou 2020) can undo ecological support provided by teachers. The presence of contextualised resources does not necessarily transfer to favourable conditions for engaging with feedback. Written corrective feedback can bridge the discrepancies between targeted linguistic accuracy and learners' current linguistic level only when external learning resources are aligned with learners' belief and capacity (Han 2019). However, even with sufficient learning resources and favourable learning environments, learners' core beliefs are less likely to change within a limited time (Han 2017).

Malleable nature of learner and contextual factors

Individual variables impacting learners' engagement with written corrective feedback range from more innate factors consisting of language proficiency (17 references in 11 studies) to more dynamic, socially constructed learner variables such as self-regulation mindset and strategies (13 references in nine studies), metalinguistic knowledge (10 references in nine studies), motivations and beliefs (10 references in eight studies), goals (6 references in three studies) and prior experience with written corrective feedback (three references in three studies).

Contextual variables comprise micro-classroom contexts (105 references in 14 studies) and micro-sociocultural contexts (i.e. the culture in the broader educational system) (three references in two studies). Activities within the micro-classroom context include learners' interactions with teachers (22 references in 11 studies) and with peers (12 references in seven studies) using various artefacts and means, such as written corrective feedback features (64 references), teacher instruction (four references in four studies), online resources (four references in two studies). The characteristics of written corrective feedback discussed in the 14 studies include types of feedback (27 references in 14 studies), error types (20 references in six studies), revision length (eight references in four studies), exposure to feedback (seven references in three studies), and colours used to indicate language errors (two references in two studies). Unlike quasi-experimental studies delving into isolated variables, these 14 studies shed new light on the joint impacts of these contextual elements and individual variations holistically in shaping learner cognitive and affective aspects of learner engagement. Although the ways individual and contextual factors interact differ across studies, two themes emerged from cross-case analysis: alignment and misalignment between learner and contextual factors.

The alignment between learner and contextual factors in fostering learners' engagement with written corrective feedback

High-level engagement (i.e. making extensive and self-initiated revisions) is facilitated by alignment between individual learner characteristics and educational contexts. Learners demonstrate willingness (i.e. perceiving the value of written corrective feedback, taking responsibility, and aiming to improve accuracy) and capacity (i.e. possessing metalinguistic knowledge and being self-regulated) to attend to teacher feedback. These favourable personal attributes are developed through their frequent and prolonged exposure to high quality feedback (e.g. specific and clear feedback) in their previous learning experience. They are motivated to use language learning resources available outside the classroom (i.e. acknowledging the trustworthiness of online translation and dictionaries). These self-regulated and proactive learners are supported by classroom environments which are designed to be conducive to feedback uptake: trusting teacher-students and student-student relationships, small classroom sizes and feedback-complementing instructional approaches (i.e. reducing the workload of writing tasks, allowing multiple revisions, establishing clear learning goals).

Alignment is crucial to foster learner engagement with written corrective feedback, as it can construct and expand mutual understanding between learners and the various dimensions of context. For example, Han and Hyland (2019) found that learners who have stronger beliefs about the value of certain types of feedback tend to produce more accurate output ("beliefs and goals" in the conceptual framework, Table 1), especially when teachers give the type of feedback they prefer ("written corrective feedback features" under "micro-classroom context" in Table 1). When students share understanding and expectations with teachers regarding the value of and rationale behind written corrective feedback (Lee, Luo, and Mak 2021), they are more likely to exert greater efforts to process and use it to improve their writing (Zhang 2021).

Apart from mutual understanding between teachers and students, self-regulation and willingness are also required to foster engagement with revision-related activities (Han 2019). Using self-regulated strategies ("individual dimension" in Table 1), learners actively make effective and strategic use of contextual resources in the instructional environments such as keeping error logs, consulting online dictionaries, and seeking help from peers to act extensively on errors targeted by feedback ("Material support other than written corrective feedback" under "micro-classroom context" in Table 1). Therefore, deep engagement is anchored in the alignment between contextual support and individual learning needs. Specifically, while learners' capacity and willingness motivate them to be open-minded to engage with teacher feedback, their active engagement is sustained through the use of contextualised resources (Kim and Emeliyanova 2021; Zhang 2021).

Unfavourable learner and contextualized factors and their misalignment in undermining learner engagement with written corrective feedback

While the construction of a synergetic web of individual and contextual elements promotes learner engagement with written corrective feedback, unfavourable learner and contextual factors would explain why learners do not or only partially engage with feedback.

Learners' difficulties in engagement with written corrective feedback are related to five major individual factors: constrained metalinguistic ability, limited self-regulated effort, learners' bias, low level of motivation, and negative attitudes. Kim and Emeliyanova (2021) found that learners with limited language learning abilities, notably those with limited metalinguistic ability, misunderstood metalinguistic cues when analysing syntactic errors. Han and Xu (2019) found that some learners invested minimal effort to understand the meaning of feedback and were unwilling to revise errors targeted by indirect feedback (feedback not explicitly indicating the location and/or nature of language errors, for example, by using codes). Han (2019) found that learners can ignore certain types of feedback due to personal bias. Waller and Papi (2017) found that learners with little motivation to improve language accuracy only adopted short-term strategies to use feedback. Focusing on the learner's attitudes, Yu, Jiang, and Zhou (2020) found that learners with less positive attitudes on their linguistic errors were likely to avoid written corrective feedback and could not produce more accurate writing than those with more positive attitudes.

Interestingly, these learner variables interact with each other. Regarding the interaction among language proficiency, metalinguistic knowledge and motivation, Han and Hyland (2019) found that learners with low proficiency took more time to understand indirect than direct written corrective feedback, and thus failed to persevere in the feedback and revision process to improve accuracy. Interaction among metalinguistic knowledge, self-regulation and belief is exemplified

in Han (2019). Her findings suggest that the lack of metalinguistic knowledge resulted in learners' misjudgement towards value and meaning of feedback which inhibited their uptake. Regarding interaction between metalinguistic knowledge and attitudes, Han (2017) found that learners with limited linguistic analytical judgement felt frustrated and thus did not exert mental effort to correct errors. Regarding interaction between prior experience and attitudes, Han and Hyland (2019) found that the prior experience of countless failures in error corrections led to learners' hopelessness towards their ability to engage with feedback.

Extending beyond the individual boundary, difficulties in engagement are also due to textual and relational factors within the contextual dimension. Textual factors, such as feedback features, are intertwined with their limited cognitive attention. One prominent feature of written corrective feedback is error types, which could constrain cognitive focus. Zheng and Yu (2018) found that learners solely focused on surface or word-level errors which feedback addressed, but not the non-linguistic foci (e.g. the content or sentence-level errors). In contrast, Han (2019) found that learners act on content feedback but ignore word choice errors. The fact that participants respond differently to error types suggests that the efficacy of written corrective feedback is unclear across different contexts. Besides these key textual factors, social interrelationships could also render misunderstanding towards teachers (e.g. Zheng, Yu, and Liu 2020) and peer support (e.g. Han and Hyland 2019). Without a mutual understanding of teachers' feedback delivery, learners misperceived its value (Han 2019), misinterpreted its meaning (Han 2017), underused teachers' in-class instruction (Coyle and Roca De Larios 2020), and even discarded feedback (Han 2019). Due to distrust and discomfort towards their peers, learners did not appreciate the value of dialogues in writing conferences and group discussions (Han 2017). Even for learners who participated in those social learning activities, inadequate interaction time and limited interactive abilities could aggravate dissensus about what aspects of written corrective feedback to focus on and how to incorporate their suggestions (Han and Xu 2019; Kim and Emeliyanova 2021). Thus, participant relationships with teaching-learning environments affect their decisions on how the meaning and value of written corrective feedback should be negotiated and how learning resources should be used.

Implications and conclusion

This qualitative research synthesis explores the conceptualisation and operationalisation of learner engagement with written corrective feedback in EFL/ESL writing contexts. The findings identify learners' cognitive, behavioural and emotional engagements with teacher written corrective feedback. This synthesis suggests that the malleable nature of learner factors and contextual factors operate independently and jointly in shaping feedback engagement, indicating the alignment between learner and contextual factors in fostering deep engagement and the misalignment between them in hindering learner engagement. To our knowledge, this is the first review that focuses on multiple factors within and across individual and contextual dimensions through an interrelated ecological lens.

Implications for research on written corrective feedback

Two future research directions could be considered: coverage of review criteria and data analysis. Expanding coverage of the dataset or a broader timeframe could enable further in-depth exploration into the multifaceted nature and context of written corrective feedback engagement research. The included dataset could be expanded from international journals to regional journals. Other data sources could also be considered, such as primary studies in book chapters and dissertations. Future reviews could also expand the time frame to include a historical review of studies focusing on engagement. More diverse studies could also help researchers identify why certain engagement patterns work better in specific contexts and why other patterns do not.

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To address the limitations of data analysis in this synthesis, future reviews can explore diverse definitions of loose terms in conceptualising learner engagement with written corrective feedback (e.g. "capacity", "literacy", "uptake"). A more granular construct of learner engagement variables could contribute to a more sophisticated and ecologically valid conceptual framework for future primary studies and reviews (e.g. by validating and building on Chong's (2021) ecological feedback model).

Implications for primary studies on written corrective feedback

Based on RQ1, future studies can contribute to the underexplored themes in this review such as computer-mediated written corrective feedback delivered by teachers synchronically or asynchronously in a post-Covid era (Chong 2019b). Another missing 'teacher variable' could also fill a piece of the engagement puzzle since it is critical to inquire whether teacher beliefs would impact learner behaviours and attitudes. From our synthesis, only three primary studies based on teachers' beliefs (Lee 2019; Mao and Crosthwaite 2019; Zheng et al., 2020) were found in the last five years from the 14 articles. Findings from RQ2 suggest that one potential line of research can explore the confluences of learner and contextual variables to identify alignment and misalignment between these two groups of factors. It would also be interesting to investigate more extensively and intricately the ways these two groups of factors interact and how they influence learners' engagement.

Implications for written corrective feedback practices

Findings of this review are relevant to English for Academic or Specific Purposes teachers in universities who strive to facilitate students' engagement with written corrective feedback or feedback generally. The synthesised findings suggest that English teachers need to adopt a macro and ecological view when designing feedback strategies appropriate to their students. Traditionally, written corrective feedback research has encouraged teachers to consider the types and foci of feedback; however, the recommendation from this review is that English teachers need to take into account a plethora of learner and contextual factors (see Table 1) when designing feedback activities. To address the needs of learners, it may be necessary for English teachers to conduct a needs analysis or a more dialogic approach so that students' development and language needs can be catered for. As for contextual variables, informed by ecological systems theory, this review identifies additional contextual dimensions that English teachers need to scrutinise, including the instructional and the broader sociocultural environments where teachers and students are situated.

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