

Dynamic written corrective feedback: A scoping review

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Abstract

In this paper, I present a literature review of the published empirical studies that have thus far been conducted on Dynamic Written Correct Feedback (DWCF), an approach to written corrective feedback (WCF) that utilizes a coding system on short, student-produced texts and routine self-editing that promises to be “manageable, meaningful, timely, and constant” (Hartshorn & Evans, 2012, p. 30). Much of the current research on DWCF consists of ecologically sound studies in authentic classroom contexts in Intensive English Programs or developmental writing classes, with occasional studies in secondary schools, first year composition, graduate student writing courses, or English as a foreign language contexts. By and large, the growing body of research around the topic has identified various strengths DWCF can bring for particular students producing short texts in certain contexts, especially regarding measures of increased accuracy for a number of error types and fluency. DWCF may also be easily adaptable to various student/programmatic needs.

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Introduction

Written corrective feedback (WCF) is typically operationalized as comments made on student-produced texts designed to provide grammatical/linguistic support to multilingual students (Ferris, 2006). While some researchers have doubted the positive impact teachers historically have assumed WCF brings to language/writing classrooms (e.g. Bruton, 2009; Truscott, 1996), over the last few decades, extensive studies have provided evidence that WCF can be meaningfully employed to promote increased linguistic accuracy, at least for particular students in certain classroom environments and on particular linguistic features (Ferris & Kurzer, 2019). Accordingly, a primary question directing literature on WCF has shifted from *if* instructors should utilize WCF in their classrooms to *how* to best support student learning via classroom practices that also likely include WCF (Ferris & Kurzer, 2019). The growing corpus of research on one particular method of WCF—Dynamic Written Corrective Feedback (DWCF) (Evans et al., 2010)—illustrates that the approach largely aligns with the best practices discussed by general WCF researchers.

In the second language (L2) writing classroom, instructors can utilize DWCF to “help L2 learners improve the accuracy of writing by ensuring that instruction, practice, and feedback are manageable, meaningful, timely, and constant” for students and their instructors (Hartshorn & Evans, 2012, p. 30). Per DWCF, feedback expectations remain manageable for instructors, and the coding system ensures that feedback is also comprehensible and accessible for their students. As originally developed (first published in Evans et al., 2010), DWCF replaced traditional grammar instruction in an intensive English program and followed the following steps:

1. The course instructors have their students write short paragraphs each course meeting for approximately 10 minutes on assigned, usually general, topics to ensure that students are able to produce ample authentic student-produced text. These texts are clearly designated first drafts and are turned in to the instructors to review.
2. The instructors code student errors in the student texts using a specific coding system (Appendix A contains my coding system adapted from the original and tailored to student needs in my context).
3. During the following course meeting, the instructors return the first drafts with errors coded to the students. Students tally all errors found in their first drafts in a log (Appendix B contains my error log adapted from the original).
4. The instructors then have their students self-edit the first drafts in class where they can ask clarifying questions. Students turn in these second drafts so their instructor can code remaining or newly introduced errors. This self-editing process is then echoed until the student produces a fully error free draft. This requirement may result in up to four or five drafts edited for a single DWCF round. Students continue to record errors present in all drafts in their error log. The error log is ideally accessible and routinely checked by the instructors, allowing them to adjust course content and presentation to better address students' individual needs.
5. Simultaneous to editing previous rounds of DWCF, instructors direct their classes through writing first drafts of additional DWCF rounds on new topics. Accordingly, students may be editing several rounds of DWCF alongside composing new drafts.

Second Language Acquisition (SLA) Theories and DWCF

Succinctly, along with other approaches to WCF, principles of coding systems such as DWCF align with well-known SLA theories. For example, per skill acquisition theory (DeKeyser, 2001, 2007) language learners must cultivate declarative knowledge (what they intellectually comprehend) previous to acquiring procedural knowledge (being able to apply that declarative knowledge to real-world language production). The coding and in-class instruction portions fostered by DWCF can support students as they obtain procedural knowledge and DWCF's extensive self-editing procedures may help them develop procedural knowledge and automatize production of the target L2 linguistic features.

Via DWCF, course instructors may meaningfully interact with students' Zone of Proximal Development (ZPD) and assist students with developing internalization (Vygotsky, 1978) and transferability of target linguistic features. Instructors can use DWCF principles to ensure that they are adequately scaffolding grammar feedback (Wood et al., 1976) and also maintain comprehensible input—or *i+1*—in a class (Krashen, 1985). Researchers such as Long (1996) have explicitly promoted corrective feedback (both written and spoken) like DWCF as a meaningful application of Krashen's Input Hypothesis to expediate language acquisition for some linguistic features such as vocabulary, certain syntactic features, and morphology features.

Recognized Best Practices of WCF and DWCF

By helping instructors deliver “manageable, meaningful, timely, and constant” feedback (Hartshorn & Evans, 2012, p. 30), the established WCF literature identifies a number of pedagogical considerations that advocate for coding systems such as DWCF.

While many relatively recent WCF studies identify increased accuracy when *focused* WCF—which addresses only a few error types—is employed when compared to *unfocused* or *comprehensive* WCF—which addresses many or all grammatical errors (Bitchener, 2008; Ellis et al., 2008; Sheen, 2007), other work stands in favor of unfocused or comprehensive WCF (Reynolds & Kao, 2022; Xu, 2009). In particular, as some researchers explored only articles/determiners with resulting increases in accuracy on those features (e.g. Bitchener & Knoch, 2010; Ellis et al., 2008), many researchers advocate for focused WCF and explicit instruction on only a narrow range of linguistic/grammatical features. However, such an approach ignores the ecological actuality for many instructors who likely do not limit linguistic feedback to only a select number of features (Ferris & Kurzer, 2019). And students may indeed be overwhelmed by comprehensive feedback on long pieces of writing. However, the more manageable amounts of promptly received feedback on short student-produced texts when coupled with prompt editing expectations from DWCF may scaffold student learning across a wider variety of linguistic features (Hartshorn & Evans, 2012; Kurzer, 2018a).

Research shows that *indirect* WCF featuring an explicit correction—contrasted with *direct* feedback featuring such a correction—may result in stronger long-term acquisition of linguistic/grammatical features (Ferris, 2006) due to increased internalization (Kurzer, 2018a; Lalande, 1982). As DWCF scaffolds student learning by providing codes targeting specific error types but does not provide a glossed correction, students receive some guidance but still bear the responsibility of figuring out how to correct the error on their own, resulting in improvements in accuracy (Kurzer, 2018a; 2022).

Research also indicates that, compared to *unlabeled* WCF like simply highlighting errors, *explicit* WCF that identifies error types may remind students of previously acquired grammar knowledge (Bitchener, 2008; Bitchener & Knoch, 2010; Ferris,

2006; Sheen, 2007). A coding system such as that employed in DWCF may connect previously acquired declarative knowledge (DeKeyser, 2001) to their own writing in the L2. Multilingual students also seem to more highly value explicit WCF over unlabeled WCF (Lee, 2005), although we collectively require more extensive research investigating students' engagement with WCF to inform pedagogically sound WCF approaches (Mao & Lee, 2023).

Lastly, while WCF research reveals mixed results regarding improvements in accuracy on linguistic features with idiosyncratic rules—so called *untreatable* errors—that are challenging to teach, DWCF research has shown improvements even on these features (Hartshorn & Evans, 2012; Kurzer, 2018a; 2022). Some of these untreatable features, including “word order, sentence boundaries, phrase construction, word choice, or collocations,” may “obscure meaning” (Ferris, 2010, p. 193), although others, such as prepositions, may not unduly impact comprehension. DWCF may be an effective scaffold to support acquisition of these untreatable features due to the focused practice stemming from the intervention.

Empirical Research Articles on Dynamic Written Corrective Feedback

The literature that includes DWCF has been growing in recent years, including empirical research specifically investigating various facets of the pedagogical approach in different contexts. Table 1 contains a brief overview of the research articles that investigated DWCF in English speaking, post-secondary contexts published through early 2023.

Table 1

Summary of Previous Research on DWCF in English-speaking, Post-secondary Contexts

Study	Control	Large N (>30)	Context	Longitudinal
Evans et al., 2010	No	No	IEP	No
Hartshorn et al., 2010	Yes	No	IEP	No
Evans et al., 2011	Yes	No	Undergrad	No
Hartshorn & Evans, 2012	Yes	No	IEP	No
Hartshorn & Evans, 2015	Yes	No	IEP	Yes
Kurzer, 2018a	Yes	Yes	Undergrad	No
Kurzer, 2018b	Yes	Yes	Undergrad	No
Kurzer, 2019	No	No	CC	No
Eckstein et al., 2020	No	No	Grad	No
Messenger et al., 2020	No	No	IEP Instructor	No
Eckstein & Bell, 2021	Yes	No	Sheltered FYC	No
Kurzer, 2022	Yes	Yes	Undergrad	No
Mahmoud, 2023	No	Yes	Undergrad	No
Sayad et al., 2023	Yes	No	IEP	No

DWCF Impact on Student Writing in Post-Secondary Contexts

The earlier research investigated the DWCF treatment as a replacement to traditional grammar instruction in an Intensive English Program (IEP), typically finding statistically significant gains in linguistic accuracy and moderate to large effective sizes attributable to DWCF in treatment sections compared to control sections of these courses (Evans et al., 2010; Hartshorn & Evans, 2015; Hartshorn et al., 2010). One study involved longitudinally collected data from students across two semesters in the same IEP, with similarly meaningful findings and effect sizes (Hartshorn & Evans, 2015). An additional study from this IEP context that lacked a treatment/control comparison found improvements across a term in student writing in a course that used DWCF to replace grammar instruction (Hartshorn & Evans, 2012). Specifically, the following grammatical/linguistic features improved to a statistically significant level across the term: determiners, numeric agreement, lexical, verb, semantic, and mechanical accuracy, and sentence structures (Hartshorn & Evans, 2012). A more recent study conducted in an Iranian IEP identified improvements in students' accuracy, fluency, and complexity when using DWCF compared to students who did not use DWCF, although those differences were not statistically significant (Sayad Deghatkar et al., 2023).

In optional grammar support classes for matriculated multilingual students at the university level, an additional study replicated the approach of the initial IEP study, similarly finding statistically significant improvements in the writing of the treatment students compared to the control students on a number of grammatical features, along with moderate to large effect sizes (Evans et al., 2011). While these studies laid the groundwork establishing DWCF as an impactful pedagogical intervention, all were quite limited in terms of sample sizes (fewer than 30 students per group per study).

In a separate round of research that employed a larger number of students across beginning, intermediate, and advanced (but pre-first year composition) developmental courses, I explored various facets of accuracy, first looking more broadly at global, local (Bates et al., 1993), and mechanical categories (Kurzer, 2018a). In this first exploration of student-produced texts from 325 developmental writing students, I identified moderate to large effect sizes attributable to the DWCF treatment and statistically significant differences in improvements in term-end student produced texts with the treatment students producing more accurate writing across all error categories and at all levels (Kurzer, 2018a). For the intermediate and advanced groups, I also had students self-edit diagnostic paragraphs they wrote at the beginning of the term; treatment students successfully corrected a higher number of the errors than their control peers (at a statistically significant threshold), demonstrating that DWCF may be used to better instill autonomy (Ferris, 2006; Lalande, 1982) in multilingual students, at least in some cases.

In a more fine-grained investigation of the same data collected from student papers written at the intermediate and advanced levels, I found statistically significant improvements in the accuracy of writing of students who participated in courses that

featured DWCF compared to the control on nearly all specific error types (Kurzer 2022). Even when applying a more conservative Bonferroni correction (used to protect against Type 1 Error when conducting multiple analyses on a single dependent variable as in this case), I still found moderate to large effect sizes and statistically significant differences for nearly all error types with the exception of word order, spelling, capitalization, and unclear for the intermediate students and capitalization for the advanced students.

An additional study investigated the possible role of DWCF in first year composition (FYC) courses sheltered for multilingual students (Eckstein & Bell, 2021). These researchers did not identify a statistically significant improvement in grammatical accuracy attributable to DWCF possibly due to a ceiling effect stemming from their participants' advanced English proficiency or FYC course aims—such as fostering awareness of audience needs or expectations of genre—that may be at odds with DWCF. While this study complicates the body of literature indicating DWCF is valuable as a pedagogical practice to improve grammatical/linguistic accuracy in short student-produced paragraphs, the study reflects only one context and featured relatively small sample sizes (treatment $n=30$ and control $n=33$). Finally, Marzban and Arabahmadi (2013) and Rassaei (2021) explored DWCF in Iranian EFL contexts.

In a research project looking at DWCF in elective research and writing support classes containing a total of 22 graduate students, Eckstein et al. (2020) contrasted the timing of rounds of DWCF (either grouped together at the end of the term or spread equidistant across the term). The authors found statistically significant improvements in complexity and fluency in the students who engaged with DWCF consistently compared to the group that only went through rounds of DWCF at the end of the term but no statistically significant gains in accuracy measures for either group (Eckstein et al., 2020). While the practice writing regularly improved other facets of students' writing, the lack of improvement in accuracy may support the idea of a possible ceiling level where DWCF lacks efficacy. However, this study employed only a small amount of graduate student in a single context, so more research is necessary.

This growing body of empirical evidence from these studies—especially those studies looking at DWCF in an IEP and in developmental writing contexts—suggest that DWCF can be an effective intervention to help at least some lower-level students in certain contexts increase accuracy in their own short writing.

Student and Teacher Responses to DWCF and Impact on Student Writing Efficacy

While tangible gains in accuracy in student writing is one facet that should drive widespread adoption of a pedagogical practice such as DWCF, gaining an increased understanding of how such practices are received by instructors and students alike is also important. My own research has explored student reactions to DWCF and how DWCF can affect students' writing efficacy. Using the same group of students in my

earlier work (2018a; 2022), I collected and contrasted survey data asking about students' writing efficacy and found that those students in classes that employed DWCF responded more positively—to a statistically significant level—than their control peers on the following variables: the value of peer feedback, quality of grammar feedback, the quality of general class instruction, the value of peer feedback, and the quality of the grammar feedback they received (Kurzer, 2018b). Interestingly, perhaps due to their increased awareness of their grammatical strengths and weaknesses from tracking error patterns throughout the term, treatment students did not think more highly of their own grammar abilities (Kurzer, 2018b).

From survey items ranking classroom pedagogies, students ranked DWCF highly, similar findings from a small action research study exploring student perceptions of DWCF in an intermediate L2 writing community college course (Kurzer, 2019). These community college students specifically shared that DWCF more closely aligned with their language mastery levels than the grammar textbook used in the course did. However, several students noted that the textbook remained a valuable resource, suggesting that DWCF may best be used to augment other forms of grammatical support such as formal textbook use, exercises, and/or lecture content, rather than simply replacing such instruction completely. Or at least that students see value/reassurance in standard pedagogical approaches such as using a grammar textbook. An additional study of tertiary students' perceptions of DWCF similarly revealed that 31 of 32 participants responded positively to the treatment, mentioning that DWCF coding helped them understand error types and patterns, was faster than oral feedback, and that they felt that DWCF helped them improve in their language mastery (Mahmoud , 2023)

While my own experiences working with teachers who use DWCF has resulted in anecdotal evidence that teachers—once coming to understand the underlying principles of the approach—value DWCF as being a manageable and yet effective approach to providing students with valuable, individualized corrective feedback that promotes uptake and self-editing skills, little formal research has thus far been published on teacher perspectives. One study featured interviews with five experienced IEP instructors who had consistently used DWCF in their classes (Messinger et al., 2020). While all five instructors over all valued DWCF, they noted challenges in keeping feedback practices manageable and effective, especially when working with more proficient students and provided recommendations to ensure DWCF's continued viability. In a separate study, eight instructors were interviewed about their experiences using DWCF, with seven identifying DWCF as a productive pedagogical approach, at least when utilized alongside other modes of providing feedback (Sayad Deghatkar et al., 2023), reinforcing the perspectives of the community college students outlined earlier (Kurzer, 2019).

DWCF in Other Contexts/in Other Languages

Beyond higher education in the United States, several studies have explored DWCF. In brief, notable studies include Pavez López's (2019) dissertation that investigated DWCF in a small cohort of English as a Foreign Language (EFL) students in a Chilean secondary school. Kamalian and Lashkarian (2014) explored DWCF in elementary school ESL contexts. A current study being conducted by a PhD student (Andrew Barnes) involves DWCF on a web-based platform in Japanese EFL courses.

In non-English language courses, DWCF has been employed and researched in Korean as a foreign language in Oh's (2020) graduate thesis, where she found—despite the small sample size—significant gains in linguistic accuracy but no increases in fluency or complexity. A current dissertation being conducted by Ana Ruiz Alonso-Bartol is looking at DWCF being used in beginning-level Spanish as a foreign language classes taught by novice (graduate student) instructors.

Conclusions and Possible Adaptations of DWCF

With some nuance, the expanding body of DWCF research indicates that the intervention is typically well-received by students and instructors and, at least for some students in some contexts, results in measurable and meaningful improvements in grammatical/linguistic accuracy on short, student-produced texts. While the studies that have been conducted in FYC or graduate student contexts so far have not identified improvements in accuracy attributable to the intervention, those studies tend to be rather small so far, so further research is needed before we can point more definitively to a ceiling effect at which DWCF is no longer effective. That said, most of the research that has identified improvements in accuracy have been done in IEP or developmental writing contexts.

DWCF has also been shown to result in improvements in accuracy under a number of modifications (including frequency of DWCF rounds, different coding schemes, and in different types of courses/context). The early IEP studies completely replaced grammar instruction with DWCF (Evans et al., 2010; Hartshorn & Evans, 2015; Hartshorn et al., 2010); other studies explored DWCF as a complementary approach to composition instruction in developmental writing or FYC contexts. Early studies required students to edit out all errors within a single round of DWCF; other studies identified statistically significant improvements with only two drafts written/edited per round.

DWCF may be more effective when integrated into a course more fully by using topics designed to support other course aims. Student writing on topic beyond generally accessible themes such as weather or food as originally conceived could be used as the texts on which to give feedback. These prompts could include reflective writing, reading responses, or portions of larger assignments, for example.

The improvements in self-editing identified in some DWCF studies suggests that the scaffolding provided by coding systems as in DWCF may help students develop stronger self-awareness that may translate to other writing contexts. Using DWCF to augment grammar instruction from books and exercises may give students valuable practice and time spent working directly with the target language—especially for untreatable grammatical concepts—that may be more effective than simply relying on grammar books. The recursive nature of the DWCF process may also translate to more time spent writing that could promote meaningful mastery of writing strategies beyond simply increased accuracy.

My own research has shown that students generally report that they value DWCF in their classes (Kurzer, 2018b, 2019); as other studies have identified that many multilingual students recognize that they have grammatical limitations and accordingly expect WCF from their teachers (Bates, Lane, & Lange, 1993; Ferris et al., 2013; Han & Hyland, 2015), DWCF may adhere to these students' course expectancies. That said, many researchers and instructors seem to increasingly be concerned that WCF approaches like DWCF can result in toxic classroom environments—unresponsive to socially progressive pedagogical approaches—that place undue stress on form and accuracy and set unrealistic expectations regarding adherence to dominant linguistic narratives/ideologies while trivializing students' home languages (Loza, 2021), especially when considering WCF from a global Englishes perspective (Lee, 2023). While I agree with the validity of those concerns, I also believe that, as long as DWCF augments other anti-racist language/composition pedagogies to promote communication over any arbitrary/unrealistic notions of correctness, socially progressive teachers can still ethically employ a coding system like DWCF. When introducing DWCF—and throughout the term—instructors can and should reinforce accuracy as being but one aspect of language acquisition (Kurzer, 2022).

Brief Recommendations for Additional Research

While some studies on DWCF use newly written student-produced writing samples in ecologically valid classroom contexts to help counter some of the limitations common in many research reports on WCF generally as well as DWCF specifically, we need further research. None of the DWCF studies conducted thus far investigated any possible improvements in students' writing beyond timed contexts, for example. As much of why teachers use WCF is with the explicit aim of improving students' work beyond our more sheltered classes, research identifying any possible link would be extremely valuable. Ideally, that research could also longitudinally track students throughout their undergraduate experiences as well.

Further research on DWCF in varied contexts and using different approaches would also provide valuable insights into best practices of the approach that could be used to support teachers, especially those who are early career. More research into different IEPs, first year composition programs, discipline-specific writing courses/writing intensive courses, additional writing support courses for graduate students, etc. would

help provide a more complete picture of how DWCF might impact different students differently. We also could benefit from research that explores and contrasts variables such as varying the coding systems used in DWCF, requiring different lengths of student texts, varying the frequency of rounds of DWCF, or employing DWCF alongside other pedagogical approaches such as contract grading or anti-racist/translingual exercises. Gleaning more insights into teacher opinions and thoughts about how to adapt DWCF to different classroom contexts (especially for novice teachers) could inform additional research objectives. Such research would best be grounded in ecologically valid contexts to help ensure theorists and researchers can advocate for meaningful advances to support authentic student learning.

The growing body of research indicates that DWCF can be meaningfully used to support student acquisition of target language grammatical features, at least for some students in certain contexts. Via DWCF, instructors can provide scaffolded indirect feedback that encourages students to practice and acquire grammatical features of the target language themselves (Lalande, 1982) and may result in increased automatization (DeKeyser, 2001) and accurate language production. From this automatization, students may develop further self-editing abilities (Ferris, 2006; Lalande, 1982) and self-sufficiency that may help multilingual students foster meaningful learning and communication skills that can endure throughout their educational careers.

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Appendix A

DWCF Writing Correction Marks

	Code	Error Type	Example	
Global Errors	VF	Verb Form	It was happened yesterday. Psychology expose you to behavior.	
	VT	Verb Time	It happen yesterday.	
	SS	Sentence Structure (incl. Run-on and incomplete)	They brought the man who them him found. Because they thought it was good. Because friendship takes effort, so it is time-consuming.	
		Word Order	Especially, I miss home.	
	WC	Word Choice (that impacts comprehension)	Candy makes children feel a sweet taste.	
Local Errors	PP	Prepositions	I was responsible of everything.	
	D	Determiner (articles)	The trip to United States was enjoyable.	
	NF	Noun Form	All family member are supposed to get along. She limited the amount of candies I could eat.	
	WF	Word Form	Money brings themselves more opportunities.	
Other Errors (Mechanical)	SPG	Spelling	I never worried about my teech getting bad.	
	P	Punctuation	When I was visiting; one morning scared me.	
	C	Capital letter	Students love to party. they also love to eat pizza.	
	^	U s e w i t h S S	Insert something	A good major helps you earn a lot money.
			Omit something	I chose this major is because it is interesting.
	?	Meaning is not clear	He borrowed some smoke.	
	AWK	Awkward wording (that is still comprehensible)	She says that raising a pet needs responsibility.	

Appendix B

Error Log

		1	2	3	4	5	6	7	8	9	10	Total
Paragraph Score:												
Global Errors	VF											
	VT											
	SS											
												
	WC											
Local Errors	PP											
	D											
	NF											
	WF											
Other Errors (Mechanical)	SPG											
	P											
	C											
	^											
												
	?											
	AWK											

Appendix C

DWCF Paragraph Prompts

Diagnostic/Pre-test (used at both intermediate and advanced levels): Discuss what you want to accomplish this quarter. What do you need to do in order to accomplish these goals? (Remember that these paragraphs **shouldn't** be returned to the students for editing until the end of the quarter, for our study.)

Study prompts (used at the intermediate levels):

1. Describe your week so far. What have you accomplished? What do you still want to do? (Verb tense)
2. Write about your most recent vacation. What did you do? Where did you go? (Verb time)
3. What is a regret you have? What should you have done and why? (Modals)
4. What is the best gift you have ever received and why? (Passive voice)
5. Think of a prominent historical figure. What are his/her qualities? (Subject/verb agreement)
6. What is your definition of success? What makes a successful person? (Word order)
7. If you were given the chance to change your life at this moment, what would you do and why? (Conditional sentences)
8. Describe an embarrassing moment you've experienced. (Clauses)

Post-test prompt (used at both intermediate and advanced levels): If you were given the chance to change your life right now, what would you do and why?