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Contextualizing Corrective Feedback in L2 Writing Pedagogy

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Contextualizing corrective feedback in second language writing pedagogy

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Abstract

Although effective writing skills are vital to the success of university-level students, second language (L2) writers face unique challenges in developing these skills. This is particularly relevant to their ability to produce writing that is linguistically accurate. While many writing teachers feel a great commitment to these students, much of the research has either led to conflicting results or provided teachers with limited practical guidelines that can be utilized effectively in the classroom. This is especially true regarding written corrective feedback (WCF). Therefore, this article provides L2 writing teachers with a paradigm for understanding the WCF debate and interpreting the available research. We emphasize three contextual variables that must be considered if we are to understand the current research and maximize the utility of future research. These include the learner, the situation, and the instructional methodology. As an examination of how one of these contextual variables might affect L2 writing accuracy, this article presents an innovative instructional methodology specifically designed to improve L2 writing accuracy. We refer to the central component of this methodology as dynamic written corrective feedback. The article concludes with the preliminary results from an exploratory pilot study using this instructional methodology.

Keywords

corrective feedback, WCF, error correction, L2 writing

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I Introduction

For over a decade, second language (L2) writing teachers and researchers have vigorously debated the value of error correction or written corrective feedback (WCF) in L2 writing pedagogy. Although numerous studies, including large-scale meta-analyses have been conducted, many have produced conflicting results (Russell & Spada, 2006; Truscott, 2007). For example, some researchers such as Truscott (2007) have claimed that WCF is a ‘clear and dramatic failure’ (p. 271). Yet a growing body of evidence suggests that WCF can improve writing accuracy in limited contexts (Bitchener et al., 2005; Ferris, 2006; Russell & Spada, 2006; Sheen, 2007; Bitchener, 2008; Ellis et al., 2008; Hartshorn et al., 2010). This growing evidence in favor of focused WCF, creates an even more uncertain picture for L2 writing teachers who remain puzzled over how to interpret these conflicting results and how to identify the specific steps they can take to help their students write more accurately.

Therefore, the purpose of this article is fourfold. First, we explain how the debate should be reframed in order to have greater utility for writing teachers. Second, we present an alternative paradigm for interpreting and planning WCF research and pedagogy that is based on three contextual variables that underlie every educational endeavor: the learner, the situation, and the instructional methodology.¹ Third, we describe what we refer to as dynamic written corrective feedback, which is presented from the perspective of this paradigm. Finally, we present preliminary results from a pilot study using this instructional methodology.

II Reframing the WCF dialogue

We begin with a brief discussion of the theoretical underpinnings of WCF. We do this because we believe the debate needs to be reframed if we are to maximize the utility of continuing research. At the outset, we need to understand that students have consistently demonstrated a desire and expectation for WCF (e.g. Cohen & Cavalcanti, 1990; Leki, 1991; Hedgcock & Lefkowitz, 1994; Ferris, 1995; Truscott, 1996; Guénette, 2007). Although Truscott (1996) has suggested that teachers ought to help students not to expect grammar correction, withholding such feedback is likely to frustrate learners, erode learners’ confidence in their teachers, and undermine the learning process. Rather than disregard strongly held student preferences, ethical obligations to our students should compel us to continue to discover the complex conditions necessary for helping L2 writers improve their accuracy in their specific learning contexts.

Moreover, we need to realize that the WCF debate has been framed by the wrong question. Over the past decade, much research has focused on and continues to emphasize the question of whether we should provide WCF. Rather than asking whether to provide WCF, the more essential question is how we help our students write more accurately in their unique learning contexts. In a post-methodology era, second language writing instruction and learning should be more about what a particular student may need to improve and less about loyal adherence to a predetermined method (Kumaravadivelu, 1995, 2006; Ellis, 2005). Thus, the central aim of research about the effects of WCF should be centered on helping L2 students write more accurately and determining what

specific contextual factors facilitate or hinder those efforts. Until research answers this essential ‘how’ question, many teachers may continue to feel confused as they struggle to identify best practices for their specific classroom contexts.

A poignant analogy may be instructive here. In the early years of organ transplant research, doctors were bewildered by the nearly 100% rejection rate of healthy kidney transplants. In the early going, it seemed that only identical twins would ever benefit from kidney transplants because in no other situations were doctors able to make transplants work. Undaunted by multiple life-claiming failures, Dr James S. Wolf, transplant surgeon, noted that ‘it wasn’t that [the kidney transplants were] not going to work; it’s that we were not doing it right’ (Finch & Schroeder, 2007).

This telling observation may be insightful and encouraging, especially for L2 writing teachers who are committed to helping their students who grapple with high stakes learning needs. It may not be that WCF does not work as some have suggested; rather, it may be that many simply have not been doing it or measuring its results appropriately (Guénette, 2007). We should not abandon our efforts simply because our past pedagogical practices or methods of measurement may have been unsuccessful. Just as there were scientific and ethical reasons to continue the quest for how to transplant a kidney successfully, our ongoing efforts to understand how to use WCF effectively are rooted in important scientific and ethical reasoning.

Consider, for instance, the science surrounding feedback. Meta-analyses examining the general benefits of formative feedback in a variety of disciplines consistently demonstrate a moderate-to-strong positive effect for feedback recipients when compared to those in control groups (Guzzo et al., 1985; Azevedo & Bernard, 1995; Kluger & Denisi, 1996). This should come as no surprise since we find it difficult if not impossible to identify anything that is learned without feedback. Furthermore, this should give us confidence that providing feedback such as WCF is based on a sound pedagogical principle that is likely to improve learning.

Moreover, just as there were ethical reasons for doctors and scientists to improve how they performed kidney transplants, important ethical reasoning continues to drive L2 writing teachers to improve how to provide WCF effectively. Hafernik et al. (2002) assert two vital assumptions that students maintain when they enter into a student–teacher relationship: ‘Students assume that instructors know something that they, the students, do not,’ and they assume that ‘the instructor is able to effectively impart that knowledge’ (p. 12). Although few, if any, observers would argue that L2 writing teachers know more than their students about effective writing, the assumption that the instructor is able to impart knowledge is undermined by those who reject the value of WCF.

While the field has benefited a great deal from publications that have questioned the empirical basis for WCF (e.g. Truscott, 1996, 2007), all WCF should not be rejected simply because evidence of its efficacy is lacking in some contexts. Although linguistic accuracy may not be equally important for all L2 learners, there are many highly motivated students all over the world who pay handsome tuitions with the expectation that their teachers will help them improve the accuracy of their writing. Furthermore, the academic and professional worlds our students enter expect a high level of accuracy and precision. Neither research nor common sense suggests that students will progress toward greater

accuracy without feedback. Thus, our ethical obligations as teachers should compel us to identify the most effective ways to help our students write more accurately.

III Contextual variables

Despite these scientific and ethical reasons to understand how to best use WCF in L2 pedagogy, one might question why some studies have shown no effect from WCF and why some have produced conflicting results. Ferris (2004) and Gu  nette (2007) have suggested that one of the reasons we have observed conflicting results may be inadvertent oversight on the part of researchers. For example, Gu  nette (2007, p. 40) concluded:

Rather than interpret the conflicting results as a demonstration of the effectiveness or ineffectiveness of corrective feedback on form, I suggest that findings can be attributed to the research design and methodology, as well as to the presence of external variables that were beyond the control and vigilance of the researchers.

We need to carefully design and execute research and closely examine additional variables that may impact our teaching, learning, and research (Ferris, 2004; Gu  nette, 2007; Bitchener, 2008). While such factors could be numerous and difficult to isolate, most could be categorized as one of three types: learner variables, situational variables, and methodological variables (see Ferris, 2003). It should be noted that our use of the term 'methodological variable' refers to the instructional methodology. This should not be confused with a methodology used for research purposes.

Figure 1 illustrates how these variables might be viewed as filter points that may facilitate or obstruct improved writing accuracy. Writing becomes more accurate when the strains on learning at each filter point are minimal or nonexistent. However, learning that is facilitated at one filter point cannot compensate for a heavy strain or obstruction to learning at another filter point. In practical terms, this suggests that research must account for the potential effects of each variable individually before drawing any conclusions about the efficacy of WCF. A brief comment on each type of variable may be useful. While these three factors are interrelated and may have some influence on each other, as noted in Figure 1, differentiating among them may be useful as we seek to understand the relevant research and improve our instruction.

1 Learner variables

Learner variables consist of everything the student brings to the learning experience. This includes first language (L1), nationality, cultural identity, learning style, values, attitudes, beliefs, socioeconomic background, motivations, future goals, and many additional factors. Learner variables usually wield the greatest influence on the learning context. D  rnyei (2005) has observed that research has 'typically found individual differences to be consistent predictors of L2 learning success ... [However,] the L2-related individual difference literature has remained relatively uninfluential within the broader field of SLA' (p. 6). Similarly, Gu  nette (2007) has emphasized the crucial

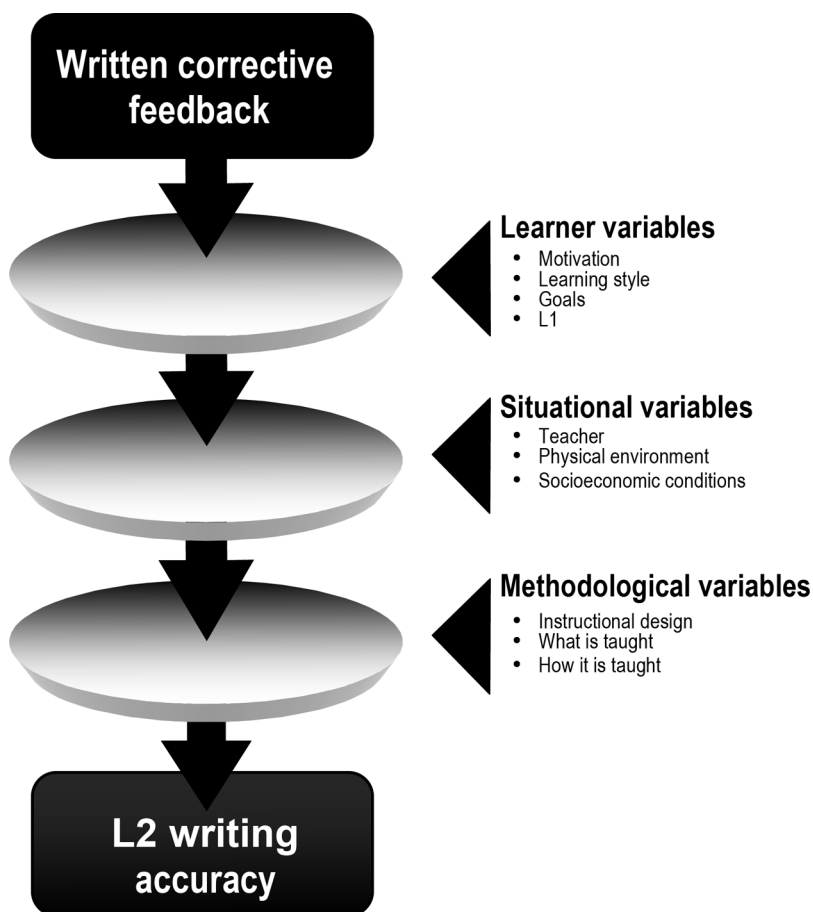


Figure 1 Contextual factors in L2 writing that impact learning and research

role of individual learner differences such as motivation. She claims that ‘If the students are not committed to improving their writing skills, they will not improve, no matter what type of corrective feedback is provided’ (p. 52). For example, if students do not intend to do much writing in the future, they may simply choose to devalue or ignore their writing instruction as they opt to focus on developing other skills, such as listening or speaking.

In addition, some students – even at advanced proficiency levels – seem driven to improve their accuracy while others appear satisfied with their skills because their errors rarely interfere with communication. Another issue may be time management. Teachers may give good feedback, and students may be motivated to improve, but if they put off revising until the last minute, they are not likely to benefit from the feedback.

Furthermore, some researchers (Ferris & Hedgcock, 1998; Ferris, 2006; Guénette, 2007) have suggested that, despite the intentions of teachers or students, students at lower

proficiency levels may lack the linguistic awareness to correct the errors that teachers identify in their writing. Also, issues of language distance (Odlin, 1989), for example, may make it more difficult for native speakers of Asian languages to master writing in English compared with native speakers of a more similar language, such as Spanish.

Interestingly, many of the very patterns observed in WCF in L2 writing can also be observed in studies on formative feedback across many different disciplines. For example, Shute (2008, p. 176) noted that one reason studies examining formative feedback effects are so inconsistent may be a function of individual differences among motivational prerequisites (e.g. intrinsic motivation, beliefs, need for academic achievement, academic self-efficacy and metacognitive skills).

2 *Situational variables*

In addition to learner variables, situational variables can also affect WCF. Situational variables include everything that shapes the learning context beyond what can be attributed specifically to the learner or to the instructional methodology. These include factors such as the teacher, the physical environment, the learning atmosphere, or even political and economic conditions. While in many contexts situational variables may have a negligible effect on learning, in other contexts their influence may be so great that they completely overshadow the potential effects of the learner or the instructional methodology. For example, even if the learner is highly motivated and the instructional methodology has been shown to be effective, learning may be undermined due to problems in the physical environment (e.g. the room is too hot, the lighting is poor, the behavior of classmates is distracting). Conversely, some situational variables may help facilitate learning beyond what could be attributed to either the learner or the instructional methodology.

We also emphasize that even the teacher should be considered a situational variable apart from the instructional methodology. For example, how might the motivations, beliefs, priorities, instructional philosophies, personalities, or competencies of individual teachers affect learning and research outcomes, regardless of the learner or the methodological variables? Ferris (2006), for instance, suggests that significant differences in the performance of L2 writers she observed may have been due in part to teacher differences.

3 *Methodological variables*

In addition to accounting for important learner and situational differences, we must also be aware of the different instructional methodologies used to facilitate learning. Methodological variables consist of the features of the specific design of instruction and include what is taught and how it is taught. Even the highly motivated learner, for example, may miss the potential benefits of WCF when instructional methodologies or activities lack appropriate sequencing, effective pacing, or adequate practice and repetition, or when students are overwhelmed with so much feedback that they cannot adequately process or learn from it. For each unique learning context, we should ask how our students might benefit from WCF. We should identify what should be corrected, how it should be corrected and how

often. We also should determine the most effective ways to have students process and learn from correction so they can apply what they learn in subsequent writing.

Two serious problems have plagued a number of past studies on WCF. The first is that some instructional methods have been viewed as equivalent or comparable, although substantial differences may have been present (Guénette, 2007). Such differences make it difficult to interpret research findings, especially those that compare studies (see Ferris, 2003, 2004). The other problem arises from the nature of the instructional methodology itself. Although the needs of L2 writers are considerably different from those of L1 writers, many instructional methodologies continue to be modeled after pedagogical approaches designed for L1 writing (Ferris & Hedgcock, 2005). Some researchers suggest that instruction for L2 students ought to be tailored to meet their specific and unique needs (Silva, 1993; Grabe, 2001; Hinkel, 2004; Storch, 2009). For example, while developing rhetorical writing skills may be equally challenging for both L1 and L2 writers, it may be much more difficult for L2 writers to produce writing that is linguistically accurate (Hinkel, 2004; Storch, 2009). If this is true, L2 writing teachers need an approach to writing pedagogy that effectively addresses this need.

Learner, situational, and methodological variables deserve much more attention than they have received in the literature and research thus far. While each of these factors needs to be carefully analysed and used to guide our thinking about pedagogy and research, it is our assertion that methodological variables warrant much greater emphasis if we are to help L2 learners maximize the accuracy of their writing. This is especially true if the needs of L2 writers are indeed different from those of L1 writers. Moreover, we stress that while researchers and practitioners may have little if any control over many learner and situational variables, they have extensive control over methodological variables. Therefore, the final section of this article presents an instructional methodology we refer to as dynamic WCF. It is designed to improve the writing accuracy of L2 learners of English for academic purposes. The presentation of this methodology is followed by an exploratory study that tests the potential efficacy of the methodology.

IV Instructional methodology

Dynamic written corrective feedback was developed in direct response to the perplexing question writing teachers continue to ask: If students do not seem to improve, why bother correcting errors? The methodology is based on four assumptions:

- Students desire to improve their linguistic accuracy (Ferris & Hedgcock, 2005);
- Students expect to have their writing errors marked (Cohen & Cavalcanti, 1990; Leki, 1991; Hedgcock & Lefkowitz, 1994; Ferris, 1995; Truscott, 1996; Guénette, 2007);
- Students can improve their linguistic accuracy with appropriate error correction (Ferris, 2002; Bitchener, 2008); and
- Error correction can be consequential when it is manageable, meaningful, timely, and constant.

1 Principles of dynamic written corrective feedback

Sound pedagogical practice begins with the end in mind. In this case, what exactly do we mean by consequential feedback? Teachers provide students with WCF on the assumption that it will improve both the writing and the writer. Positive change is the essential reason for giving feedback, and if it has been helpful, then a student has learned or had the opportunity to learn. Reid (1993) once observed that a language teacher's purpose ought to be to 'bring about long-term improvement and cognitive change' (p. 229). Such an objective can be achieved only when students have meaningful opportunities to learn. This of course has been and continues to be a source of frustration for writing teachers when students do not seem to respond to the labor-intensive written feedback teachers provide. This is particularly true when comparing students' progress as measured on subsequent writing tasks. The central premise of dynamic WCF is that when feedback is manageable, meaningful, timely, and constant, it can be consequential.

The two principal characteristics of dynamic WCF are:

- Feedback reflects what the individual learner needs most as demonstrated by what the learner produces; and
- Tasks and feedback are manageable, meaningful, timely, and constant for both the learner and teacher.

These two characteristics are conceptually and practically interrelated and are in harmony with notions DeKeyser (2007) posits in his discussion of skill acquisition theory. DeKeyser's data suggest that declarative knowledge is required for the development of procedural knowledge and that it must be based on explicit rules and examples. Proceduralization also requires extensive and deliberate practice, which then leads to greater automatization. Essentially, we need a methodology that improves what students can do, not simply what they know.

First, consider the need for feedback to reflect what an individual learner needs based on what the learner produces. Each language learner comes to a language classroom with unique needs. At the beginning levels, these needs are often common to most of the learners in the class. They all know very little and have much to learn. However, as learners progress, their needs become more and more individualized based on factors such as first language (L1), language aptitude, and the reasons for learning a second language. Meeting the diverse needs of multiple learners is a challenge any language teacher must learn to deal with (Reid, 1993; Brown, 2001).

Next consider the need for writing tasks and feedback to be manageable, meaningful, timely, and constant. We first address manageability. Anyone who as ever taught an ESL writing class knows that providing and processing feedback can be overwhelming for both the teacher and the student. Even when students make the changes recommended by their teachers in subsequent drafts of their writing, they rarely seem to have the time or ability to learn from the feedback because it is often so voluminous. We believe this dilemma undermines the effectiveness of the teacher as well as the students' ability to learn from and apply feedback. Bitchener (2008) also recognized this problem,

describing it as ‘the difficulty that ESL learners experience in trying to cope with information overload’ (p. 109).

In response to this dilemma, Bitchener (2008) suggests that teachers and learners might benefit from focusing on ‘one or only a few error categories’ at a time (p. 108). However, while such an approach may be interesting or necessary for some research, it may have less practical application for the classroom. In authentic writing situations, students have to focus on multiple aspects and types of errors simultaneously. The alternative approach we present limits the length of the writing task to ensure that dynamic WCF remains manageable. In other words, we limit the quantity of text, not the scope of errors that are considered in the text. For our purposes, feedback is manageable for teachers when they have enough time to attend to the quality of what they convey to their students. Tasks and feedback are manageable for the students when they have enough time to process, learn from, and apply the feedback the teacher provides. Keeping tasks and feedback manageable is also an important key to ensuring that feedback is meaningful, timely, and constant.

In addition to the need for feedback that is manageable is the need for feedback that is meaningful. Meaningful feedback is a complicated construct that we define in three ways. First, feedback is meaningful if the learning cycle is completed. In other words, students must do much more than merely look over the errors that the teacher has marked and then file or throw the paper away, as they often do. They must understand why the feedback is being given and how they are to use the feedback.

Second, meaningful feedback is both cognitively and linguistically manageable. Because students must be able to process the feedback, instructors must provide explicit instruction and ensure that their feedback is not beyond a student’s linguistic level of achievement. Expecting a student to meaningfully correct a grammatical error before being introduced to that structure is wishful thinking at best.

Finally, meaningful feedback will cognitively engage students in the correction process. If meaningful feedback allows students to make positive changes, then the feedback should help students understand why and how something needs to be changed in their writing. For this to happen, students need to invest in the learning process by reasoning through their errors (Ferris, 2006). As Wiggins (1999) noted, it is not teaching that causes learning, rather ‘it is attempts by the learner to learn, to make meaning, to internalize’ (p. 8).

Feedback is timely when a minimum amount of time lapses between when a student writes and when a teacher provides feedback. Reason and experience suggest that long lapses of time between writing and feedback will minimize learning opportunities. Providing timely feedback allows for many more cycles of student production and teacher feedback than would be possible if these exchanges took longer.

The final characteristic emphasized here is that feedback needs to be constant. We believe that students will benefit more from a steady flow of manageable feedback than from sporadic feedback over an extended period of time. Students that receive constant feedback over time are likely to have a greater ability to develop habits of self-analysis and self-correction. Additionally, constant feedback will help learners to recognize their most common mistakes and then see an improvement as this methodology is applied.

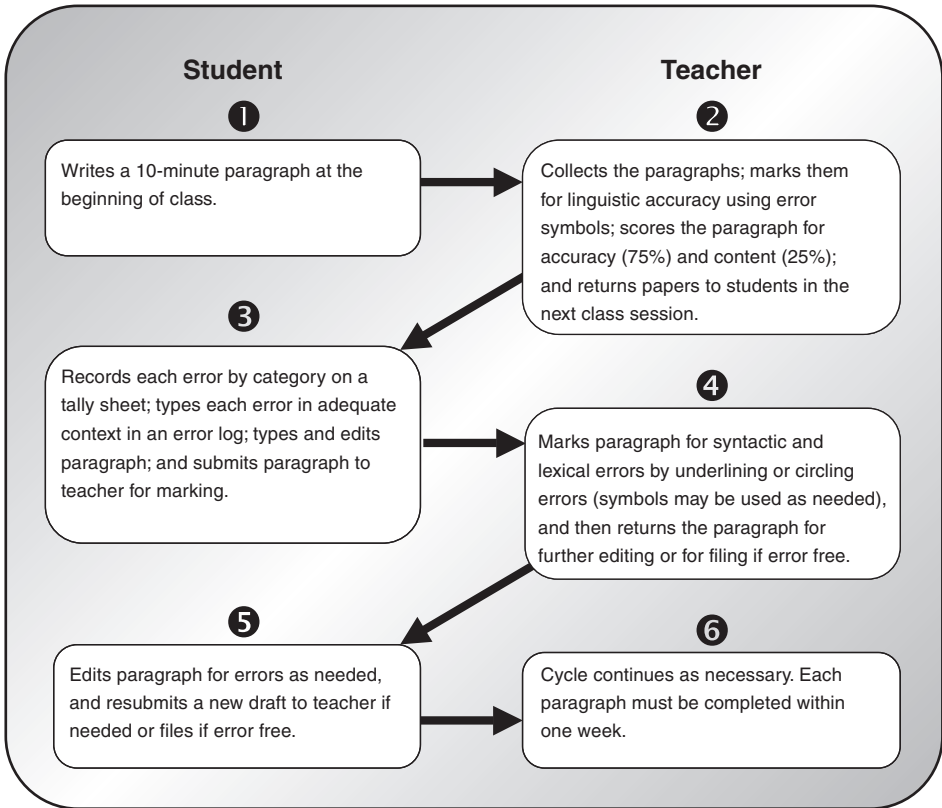


Figure 2 Overview of error-correction strategy

2 Description of dynamic written corrective feedback

With these important characteristics of effective tasks and feedback in mind, we will now consider the instructional methodology itself. To ensure that tasks and feedback are manageable for the student and the teacher, writing samples used with dynamic WCF are limited to 10 minutes at the beginning of most class sessions. (Assuming a format of four classes per week, students would write 3–4 paragraphs per week.) This time limit is based on the assumption that 10 minutes is long enough to capture a representative sample of student writing while still short enough to keep the tasks and feedback manageable.

In preparation for the writing exercises, the first few sessions of a class are spent introducing the basics of good paragraph writing: coherence, unity, developing one main topic, and providing adequate support. Once students understand the basics of paragraph writing, instructors can implement the six-step error-correction process outlined in Figure 2 and described below. This process, as illustrated here, begins with a 10-minute paragraph and ends with an error-free writing sample. Also, in order to

keep feedback constant, students write a paragraph at the beginning of nearly each class session. Once students start writing paragraphs, the process does not stop until the semester ends.

a Step 1: Students write 10-minute paragraphs at the beginning of almost every class session. They are instructed to follow the conventions of good paragraph writing, be as linguistically accurate as possible, and make the content substantive. Students are given a general topic and then develop the topic in any way they wish (for a sample timeline and paragraph topics, see Appendix 1).

b Step 2: After 10 minutes, the teacher collects the paragraphs. The teacher marks papers for lexical and syntactic accuracy using established error-correction symbols (for error-correction symbol list, see Appendix 2). Errors the student can treat (Ferris, 2001) – those that can be corrected with systematic grammar rules – are marked using symbols next to the error (indirect error correction). Errors the student cannot treat (Ferris, 2001) – those that result from aspects of the language that must be acquired over time, such as prepositions or some lexical features – are marked with a symbol and corrected (direct error correction). The teacher then assigns a score using a rubric that gives a 75% weighting to linguistic accuracy and 25% weighting to content. In keeping with the principle of timeliness, the teacher returns the papers by the next class period (for a sample of a marked paragraph, see Appendix 3).

c Step 3: With their paragraphs back in hand, the students have several tasks. They first keep a tally of errors by type. They also must keep a list of all errors in context. This list consists of the errors typed exactly as they were originally and erroneously written. This typed list is divided into error categories and contains all of the student's accumulated errors in context. Students are not expected to correct the errors in this list, but they must highlight or underline each inaccuracy. After the errors have been tallied and listed, students then edit, type, and resubmit the paragraph to the teacher for a second review. Students are not expected to add any additional ideas to the paragraph.

d Step 4: The instructor marks the second, and now typed, draft of the paragraph for accuracy. Unlike the first draft, teachers indicate errors with a check mark, a circle, or an underline. They may use an error symbol when it will be more meaningful than an underline or a check mark. They then return paragraphs to the students to edit again, if necessary, or to file if all errors have been corrected.

e Steps 5 and 6: The final two steps are repeats of steps 3 and 4. Students correct any errors and return the passage to the teacher for a final review. These two steps may need to be repeated if errors persist, although most paragraphs are completed within two drafts. The objective is to have an error-free paragraph. Assuming that students meet in class at least four days per week, they have one week from the time they receive their paragraph back for the first time to correct all errors and have an error-free paragraph.

This time limit ensures that feedback is timely and manageable. It also keeps students from creating an unproductive time gap between when the error was made and when it is corrected.

While providing frequent feedback will not be difficult for classes that meet daily, we recognize that some classes may meet only once or twice per week. In such cases, teachers and students may need to adapt this instructional methodology for their specific context. Nevertheless, tasks or feedback that are too infrequent may undermine the efficacy of this methodology. Therefore, teachers may want to explore ways to ensure that tasks and feedback continue to be frequent. For example, technological tools such as Black Board or Moodle may facilitate much more frequent tasks and feedback even if a class meets only once or twice per week.

V Preliminary study

In order to test how dynamic WCF described in this article might work, a pilot study was conducted in two separate, advanced-low ESL Applied Grammar (AG) classes in two separate semesters. Taught by the same teacher, the classes met four times a week in 65-minute sessions over a 13-week semester. The research question driving the study was as follows: Does linguistic accuracy improve in student paragraph writing over a 13-week semester when dynamic written corrective feedback is used?

I *Learner and situational variables*

In keeping with the need to address appropriate contextual variables as illustrated in Figure 1, we will briefly examine the learner and situational variables relevant to this exploratory study. The 27 ESL students in this study were enrolled in two separate sections ($n = 12$, $n = 15$) of AG during two separate 13-week semesters. Students were between 18 and 33 years old. All the students had enrolled to improve their English for academic purposes. Most of the students intended to enroll in universities in the USA either as graduate or undergraduate students once they completed their English courses. Based on the students' university ambitions and on how few of the students ever missed classes, assignments, or tests, motivation was considered to be generally high. Their language level – advanced-low – was determined by TOEFL scores (average personal best was TOEFL 500).

The AG course focused instruction on common errors found in the students' AG writing assignments rather than on a preset list of grammar topics from a textbook's table of contents. This focused instruction is integral to dynamic WCF. The course goal was to help students improve their ability to recognize and correct common grammar errors in their own writing. Objectives in support of this goal included to practice finding and correcting grammar errors in exercises and writing samples, recognize common problems related to specific grammar points, and write on a variety of topics related to academic work. To achieve this goal and these objectives, students

Table 1 Holistic paragraph scores by set

Class	Number of students	Total paragraphs	Set 1 average	Set 2 average	Set 3 average	Set 4 average
AG Winter 2007	12	27	7.39	7.46	7.71	7.86
AG Summer 2007	15	34	7.45	7.57	7.61	7.69
Overall average		31	7.42	7.52	7.66	7.78

wrote an average of 31 paragraphs over the course of 13 weeks. In addition, students also wrote an average of four timed essays (30 minutes each) in class and three papers (three to four pages each) out of class. Out-of-class essays and papers were not marked using the strategy described in this article. The instructor, who has over 20 years of experience teaching ESL and L1 writing, and 5 years of experience teaching AG, taught both classes.

2 Data collection and analysis

Since writing accuracy can be difficult to quantify (Wolfe-Quintero, 1998; Hartshorn, 2008; Wigglesworth, 2008), we utilized two different types of measure to assess writing accuracy in this study: holistic scoring and an error-free clause to total clause ratio.

a Holistic scores: The teacher scored each paragraph when it was first submitted using a holistic scoring rubric, 75% of the points possible are awarded for linguistic accuracy and 25% are awarded for the content. This measure was used for three purposes. First, writing is clearly much more than a collection of syntactically accurate sentences. Linguistic accuracy and content must both be considered. Second, it is a fairly efficient measure for a teacher who must evaluate multiple paragraphs in a timely manner. Finally, the score provides students with a sense of their performance level. These advantages notwithstanding, there was no attempt to establish reliability based on the rubric. We simply used it to provide a general sense of how well this instructional methodology might be working. Also, since it is unlikely that one writing sample is an accurate measure of a student's writing ability, scores were grouped into four equal sets according to when the paragraphs were written. Each set was then averaged to indicate the development of a student's writing accuracy throughout the semester. Table 1 presents the class sizes, number of paragraphs written, and set scores for each of the classes as well as the overall set averages.

Students in the winter class made significant improvements in their writing from the first set to the fourth set based on rubric scores ($t = -6.79$, $df = 11$, $p < .000$, $\eta^2 = .81$). Similarly, students in the summer class made significant improvement ($t = -4.9$, $df = 9$, $p = .001$, $\eta^2 = .73$). In addition, average scores in each class increased with each successive set. While these scores and the apparent trends they indicate were encouraging, the limitations that must be considered are substantial. The papers had only one reader, did

Table 2 Error-free clause ratios: First and fourth sets

Class	Number of students	Total paragraphs	1st set EFC ratio average	4th set EFC ratio average	Score gain/loss
AG Winter 2007	12	27	.45	.55	.10*
AG Summer 2007	10**	34	.418	.54	.12*
Overall average		31	.436	.55	.11*

Notes: * = $p < .01$; ** Five students were dropped from this analysis because their final portfolios were either incomplete or missing.

not receive blind ratings, and were all based on the subjective use of a generally untested rubric. Because of these limitations, a more objective and reliable measure of error-free clause ratios was also used to indicate writing accuracy.

b Error-free clauses: A number of approaches were considered for measuring writing accuracy. Wolfe-Quintero (1998) favored two possibilities that measure T-units (usually defined as an independent clause with any subordinate clauses). One is the ratio of the total error-free T-units over the total number of T-units. The other is the total number of errors over the total number of T-units. While T-units have a long history of being effective measures, Wigglesworth (2008) has reported error-free clauses (EFC) to be the most precise measure of writing accuracy that we currently have. This may be because writing will almost always produce more clauses than T-units. Thus, the clause may afford greater discriminating power than the larger T-unit.

Accordingly, paragraphs from each student's first and fourth sets were analysed for EFC. First, using a criterion of absolute agreement, two raters established the total number of clauses in each sample. Then, they independently evaluated each clause to determine if it had any syntactic, punctuation, spelling, or lexical errors. The total number of EFC was then divided by the total number of clauses (EFC/C), resulting in a ratio score. Inter-rater reliability was established with a Pearson correlation coefficient of .94. Since this process is somewhat labor intensive and resources were limited, only first- and fourth-set scores were analysed using this methodology. Table 2 presents the results of this analysis. Similar patterns were found between EFC and the holistic scores. In both cases, scores increased from the first set to the fourth set. A paired-samples T-test was used to determine the significance of this increase for each group of students.

Results indicate that for the winter group, fourth set scores were significantly higher than the first-set scores and yielded a large effect size ($t = -3.42$, $df = 11$, $p = .006$, $\eta^2 = .52$). Comparable results were observed from the summer group, which also demonstrated significantly higher scores in the fourth set when compared to the first set and similarly produced a large effect size ($t = -3.90$, $df = 9$, $p = .004$, $\eta^2 = .63$).

3 Discussion and implications

In response to the research question, data from holistic and analytical evaluations indicate that the students did improve their linguistic accuracy on new writing assignments when this error-correction strategy was implemented. These gains are quite pronounced

between writing samples taken from the beginning and end of the semester. Nevertheless, we hasten to add that results must be evaluated with caution because no control group² was used, an important and acknowledged element in research design (Truscott, 1996, 2004; Bitchener, 2005; Ferris, 2006; Guénette, 2007). However, our purpose was merely to determine whether further study of effects of dynamic WCF was warranted. Additionally, some researchers may suggest that short, 10-minute writing samples are not authentic representations of the kind of writing that students use in academic settings and that skills may not transfer to longer, more 'authentic' writing tasks. These limitations must be accounted for in future studies (forthcoming).

VI Conclusions

After nearly two decades of written corrective feedback (WCF) debate, it is our position that the time has come for research and pedagogy in L2 writing to embrace a more sophisticated view of the value of corrective feedback. We need to operate from the assumption that error correction may be a sound pedagogical practice in many learning contexts and that there are scientific and ethical reasons for our discipline to continue research on correction. Rather than focusing on whether or not such feedback has value, we maintain that researchers and teachers ought to contextualize research findings and pedagogical practice within the framework of learner, situational, and methodological variables.

More specifically, we propose that teachers and researchers look beyond methods of writing pedagogy that were developed for L1 writers and that may be less effective in L2 writing contexts. We encourage researchers and practitioners to carefully examine the effects of instructional methodologies designed specifically to improve the accuracy of L2 writers. We invite others to join with us in testing the potential benefits and limitations of dynamic WCF and our hypothesis that L2 writing accuracy may be maximized as writing tasks and feedback are made more manageable, meaningful, timely, and constant.

Notes

- 1 Here we follow Kumaravadivelu's (2006) use of the term 'methodology' to 'refer to what practicing teachers actually do in the classroom in order to achieve ... teaching objectives' (p. 84).
- 2 While this article was being prepared for publication, a subsequent study of dynamic WCF utilizing a control group was published. Results show that the writing of the treatment group was significantly more accurate than the control group based on analyses of pretest and post-test writing (see Hartshorn et al., 2010).

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
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Appendix 1 Sample paragraph writing timeline and prompts (daily class)

	Monday	Tuesday	Wed.	Thursday	Friday	Monday	Tuesday
Paragraph	Student:						
<i>One</i> Topic: Too Much Freedom	Writes draft 1	Receives draft 1 back from the teacher	Edits and submits draft 2	Receives draft 2 back from the teacher	Edits and submits draft 3 (if necessary)		
<i>Two</i> Topic: A Serious Social Problem		Writes draft 1	Receives draft 1 back from the teacher	Edits and submits draft 2	Receives draft 2 back from the teacher	Edits and submits draft 3 (if necessary)	
<i>Three</i> Topic: Care for the Elderly			Writes draft 1	Receives draft 1 back from the teacher	Edits and submits draft 2	Receives draft 2 back from the teacher	Edits and submits draft 3 (if necessary)
<i>Four</i> Topic: A Strong Economy				Writes draft 1	Receives draft 1 back from the teacher	Edits and submits draft 2	Receives draft 2 back from the teacher
<i>Five</i> Topic: Crime Prevention					No paragraph today	Writes draft 1	Receives draft 1 back from the teacher

Appendix 2 Indirect coding symbols used to mark student writing in applied grammar classes

1. D = Determiner	11. S/PL = Singular/Plural
2. SV = Subject Verb Agreement	12. C/NC = Count/Noncount
3. VF = Verb Form	13. ? = Meaning is not clear
4. ro = Run-on Sentence	14. AWK = Awkward Wording
5. inc = Incomplete sentence	15.  = Word Order
6. VT = Verb Tense	16. C = Capitalization
7. PP = Preposition	17. P = Punctuation
8. SPG = Spelling	18.  = Omit
9. WF = Word Form	19. ^ = Something is missing
10. WC = Word Choice	20. ¶ = New Paragraph

Appendix 3 Sample student paragraph draft 1

Preventing Crime

People make mistakes, but no one likes
 the mistakes ^{VF} turn into crime. And how ^{VT} could
 we stop crime? ^D The first, education plays an
 important role. If people get ^D suitable and
 good education, they will ^{also} learn good ^{C/nc} behaviors.
 Secondly, family is very important, too. If
^D the parents take care of their children
 and ^{VF} be good examples in their homes,
 children seldom become criminals. ^D The third,
 strict ^{S/PI} law can prevent crime as well. If
 a country has ^D a strict ^{S/PI} law no one would
 want to ^{SPg} ^D make mistake.