CHAPTER TWENTY

Researching Grammar

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Grammar is a large and controversial topic in applied linguistics. In this chapter, I focus on two distinct areas related to this topic: (a) what constitutes knowledge of grammar and how we assess that knowledge and (b) grammar instruction in second language (L2) classes. The discussion of these two areas covers theoretical debates and empirical findings. This is then followed by a description of a study which attempted to address some of the shortcomings identified in current research on grammar instruction. I conclude with outlining what I consider to be areas of L2 grammar that require additional research.

L2 grammar knowledge: What is it and how do we measure it?

Knowledge of grammar is said to consist of two types: explicit and implicit knowledge. According to N. Ellis (2005), these two types of knowledge are distinct and exist in separate parts of the brain. R. Ellis (2005) lists seven criteria that can be used to distinguish between explicit and implicit grammar knowledge. These criteria include, among others: level of awareness, accessibility and whether learners can verbalize the knowledge.

Broadly speaking, *explicit knowledge* is conscious knowledge about a language (rules, conventions of use) that learners can often verbalize. Accessing this knowledge is slow because it requires controlled processing.

Implicit knowledge, on the other hand, is held unconsciously and can be accessed quickly and easily. It is the knowledge that learners draw on when comprehending or producing language in rapid, fluent communication. It is therefore implicit knowledge which is considered genuine knowledge of a language.

Thus when assessing grammatical knowledge or development in grammatical knowledge it is important to consider the kind of knowledge tested. According to Purpura (2004, 2012), tests which use constrained response type exercises (e.g. fill in the gap) test explicit knowledge. Implicit knowledge is tested via tasks requiring comprehension or production of language, in oral or written form. However, as R. Ellis (2005, 2009) points out, it is impossible to conclude with total certainty that when completing a particular test task the learner accesses only the type of knowledge that the test is designed to elicit. Rather, what researchers can do is attempt to design tests that will bias the use of one type of knowledge.

In designing grammar tests, scoring is also an important consideration (Purpura 2004, 2012). Whereas scoring constrained response type exercises is fairly straightforward, assessing extended oral and written output is more complex and requires measures not only of accuracy but also of syntactic complexity. This is because there may be a trade-off between accuracy and syntactic complexity. Some learners may achieve high scores of accuracy by using only simple sentences, whereas learners who use more complex sentences are perhaps more likely to make errors (Foster & Skehan 1996).

Extended written and oral output can be assessed using a qualitative or a quantitative approach. A qualitative approach employs a rating scale with discreet categories which describe the 'quality' of grammatical performance (Purpura 2004). The categories tend to describe global levels of accuracy (e.g. few errors overall) and syntactic complexity (e.g. a range of simple and complex sentences is evident). A quantitative approach to measuring accuracy is based on an error identification and count (Ellis & Barkhuizen 2005). Measures of accuracy are computed by dividing the total number of errors by the total number of words produced, or by computing the accuracy of production units, such as T-units or clauses. A T-unit, a common unit in the analysis of writing and speaking, is a main clause plus whatever subordinate clauses are attached to it or embedded in it (Hunt 1966). Thus the accuracy of a student's written or oral output can be represented in terms of the percentage of error-free T-units or the percentage of error-free clauses (Wolf-Quintero et al. 1998). Other measures of accuracy focus on the accurate use of a particular grammatical structure, such as verbs or articles. Measures of syntactic complexity include the proportion of clauses to T-units or the proportion of dependent clauses to all clauses (Wolf-Quintero et al. 1998).

L2 grammar instruction: Synthesis of current thinking and research

Although grammar is considered central to language learning and language use, the role of grammar in L2 teaching is very controversial. The main controversy centres on whether grammar should be taught in L2 classes explicitly. *Explicit grammar instruction* means presenting and explaining a predetermined set of grammar rules, usually but not necessarily followed by practice. Three distinct positions can be identified in the applied linguistics literature: a zero position, a focus on forms (FonFs) and a focus on form (FonF) position. These positions are based on assumptions concerning whether explicit knowledge can become implicit knowledge.

The first position, the zero position, is represented by scholars such as Krashen (1981, 1993) who see very little merit in teaching grammar explicitly. In his comprehensible input hypothesis, Krashen (1981) argued that to acquire an L2, learners simply need exposure to language input that they can understand (i.e. comprehensible input). The hypothesis was based on claims that the same processes underlie first and second language acquisition as well as research findings (e.g. Bailey et al. 1974) which showed that all learners, regardless of first language, age or whether they were instructed or naturalistic learners, proceeded along the same order and sequence in the acquisition of certain grammatical structures. Thus Krashen (1981, 1993) argues that grammar instruction serves very little purpose. It provides learners, in his view, with explicit knowledge which may enable them to monitor and edit their language output (assuming certain conditions are met), but this explicit knowledge does not become part of the learner's implicit knowledge system. Other supporters of this position are scholars who refer to Chomsky's (1976) Universal Grammar (UG) and who claim that second language acquisition is innate and has nothing to do with explicit knowledge (e.g. Schwartz 1993). The teaching implication of this position is that language classrooms should only focus on meaning; that is, language classes should provide learners with plentiful exposure to authentic and comprehensible L2 input, initially via listening and reading activities, and once the learner is ready, with authentic production opportunities.

The second position is that adopted by scholars such as DeKeyser (1998, 2007) who see merit in explicit grammar instruction. DeKeyser claims that when explicit grammar instruction is sustained and followed by appropriate meaning- based practice, it will contribute to the development of implicit knowledge. Lightbown (1991) suggests that explicit knowledge can act as a priming mechanism to help learners notice structures in the L2

input. Similarly, although N. Ellis (2005) argues that the bulk of language learning occurs through usage, he suggests that learning begins with an explicit representation of linguistic forms. Thus, the teaching implications of this position are that explicit grammar instruction should precede practice. This stance is often referred to as Focus on Forms (FonFs).

The third position is that adopted by scholars who see some merit in grammar instruction, but only when it is reactive rather than predetermined. This approach, proposed by Long (1991, 1996), is referred to as Focus on Form (FonF). It draws on Schmidt's (1990) noticing hypothesis which posits that only language which is attended to (i.e. noticed) is processed. Pedagogically, a focus on form means a spontaneous reaction to learners' language learning needs which occurs as learners engage in meaning-focused activities. These needs can be expressed as questions (e.g. clarification requests) or be evident in learners' errors. The teacher's role is to provide a brief explanation or correction which draws learners' attention to the problematic structure.

There are a few interesting points that should be noted about this debate. First, the three stances are largely theoretical rather than based on solid empirical research. Furthermore, the term FonF has been redefined and extended since its original formulation (Long 1991) and the distinction between FonF and FonFs has blurred. R. Ellis (2006), for example, distinguishes between incidental FonF and pre-emptive FonF. Incidental FonF, as in its original inception, is reactive and occurs spontaneously in response to a performance problem. Pre-emptive FonF, however, includes the use of tasks that are likely to elicit certain grammatical structures or predetermining the grammatical errors that will receive feedback (e.g. Doughty & Varela 1998), an approach which is closer to FonFs. Thus some authors (e.g. R. Ellis 2002; Garcia Mayo 2002; Lyster 2004) use the term form-focused instruction which seems to include elements of FonF and FonFs.

The available research evidence supports some form of grammar instruction. However, the evidence is largely indirect showing that in the absence of grammar instruction learners' grammatical accuracy may not develop. Perhaps the most convincing evidence comes from the French immersion programs in Canada, where researchers (e.g. Harley & Swain 1984) have shown that despite exposure to rich and plentiful L2 input (as advocated by Krashen), L2 learners may become fluent but not accurate in their use of the L2. My own small-scale study (Storch 2007) provides further support for this claim. The study examined the writing of learners at the beginning and end of a semester's study (12 weeks). The participants in the study (n = 20) were enrolled in degree programs. They were identified on an in-house diagnostic language test as needing further language support but, for a range of reasons, chose not to access the available language support services or enrol in ESL credit-bearing subjects. The study

found that after a semester of study in an English medium university, the learners' writing improved in terms of organization and development of ideas but that there was little improvement in grammatical accuracy. A more recent and larger scale study (Knoch et al. 2014) shows that even after 1 year of studying in an English medium university, ESL learners' grammatical accuracy does not improve.

The other oft-cited study in support of grammar instruction is the large meta-analysis by Norris and Ortega (2000) which showed that explicit instruction led to more substantial and enduring gains in learning than implicit instruction (extended exposure to the target forms). It should be noted, however, that most of the studies included in the Norris and Ortega meta-analysis relied on tests of explicit knowledge to show gains.

The current orthodoxy on L2 grammar instruction is an acceptance that some form of grammar instruction is beneficial but that grammar should not be the sole focus of L2 classes as in traditional language pedagogy. Rather, a growing number of scholars (see Hinkel & Fotos 2002; Nassaji & Fotos 2011) advocate a communicative approach to L2 instruction which integrates a focus on meaning and on grammar. In such an approach, the primary focus is on relevant content material or tasks which provide learners with opportunities for exposure to and authentic practice in producing grammatical structures. Consequently, research on grammar instruction now focuses on how best to teach grammar within a communicative, task-based approach and on what are the most effective ways of responding to grammatical errors in learners' language.

Research on how to teach grammar: Research on tasks

Studies on how best to teach grammar attempt to investigate which communicative tasks and task conditions are most effective in drawing learners' attention to language. This research usually requires learners to work in pairs or small groups. Some researchers have focused on tasks which only require oral language output; others have investigated tasks which require learners to jointly produce written texts.

Studies on tasks requiring oral language output have, by and large, been informed by Long's interaction hypothesis (1991). This hypothesis (or interaction approach as it is now more commonly referred to) posits that certain interactional moves (e.g. clarification requests), which occur because of a perceived communication breakdown, not only serve to make input comprehensible but also draw learners' attention to linguistic problems and push them to modify their language, making it more grammatically accurate and appropriate. Thus, research from this theoretical perspective has

attempted to identify tasks and task conditions which are likely to maximize learners' interactions. For example, Pica et al. (1993) argue that jigsaw tasks (where each learner holds information vital to the task completion and only one solution is possible) are the most effective because information exchange between the participants is obligatory.

In tasks which require learners to jointly produce written output, researchers audio record the learners' talk as they complete the tasks and the transcribed talk is then analysed for the amount of attention to grammatical structures that the tasks elicit. The unit of analysis that has often been employed in this kind of research is the *Language Related Episode* (LRE). This episode is defined as any part of a dialogue where learners talk about the language they are producing, question their language use, self and other correct (Swain & Lapkin 1998). Adopting a Vygotskian (1986) sociocultural theoretical perspective, Swain (2000) argues that these episodes are sites of language learning because learning arises in dialogue. From this theoretical perspective, speaking is perceived as a cognitive activity which externalizes thoughts. Once externalized, the thought can be analysed, questioned and reflected upon (Swain & Lapkin 2003). The term used to describe this activity of using language to deliberate about language is languaging (Swain 2010). Languaging can be self-directed or other-directed. The advantages of other-directed talk is that it affords learners opportunities to pool their linguistic resources and to resolve language problems that they may not have been able to resolve on their own (for a discussion of the benefits of other-directed talk during collaborative writing, see Storch 2013).

The following excerpt is taken from a study (Storch 2005) where learners composed a text in pairs. It provides an example of an LRE where learners engage in languaging; that is, externalizing their thoughts about the choice of a verb form. The learners offer suggestions (line 162), counter suggestions (lines 163, 164) and finally, by pooling their linguistic resources, reach a correct grammatical decision about the verb form required in this instance.

Excerpt	1:	Example of an LRE
162	M:	… the Vietnamese and the Laotian are
163	C:	improve
164	M:	have the, yeah, have, have improved yeah
165	C:	yes

A number of studies (e.g. Storch & Aldosari 2010; Swain & Lapkin 2001) have attempted to compare the effectiveness of various communicative written tasks in terms of the focus on language they generate. For example, Swain and Lapkin (2001) compared the efficacy of a dictogloss and a jigsaw task. The dictogloss task, originally designed by Wajnryb (1990), requires learners to reconstruct a text using notes taken from a dictation. The jigsaw in this study was based on a series of eight pictures. Each

learner held four pictures and thus the task required the learners to arrange their pictures in a sequence and write out a story based on the pictures. The study found that both tasks were equally effective as they generated a similar number of LREs. Others (e.g. Garcia Mayo 2002; Storch 1998) found that a text reconstruction task, where learners are provided with content words but need to insert the necessary function words or change word forms, elicited more LREs than traditional grammar exercises (e.g. fill in the blanks) and more than the jigsaw and dictogloss (Alegría de La Colina & Garcia Mayo 2007).

A related area of research on tasks is how task implementation variables affect learners' attention to language. For example, Leeser (2004) examined how proficiency pairing affects learners' focus on grammar in the learning of Spanish. In his study, twenty-one pairs of learners completed a dictogloss task. The learners were grouped according to their L2 (Spanish) proficiency, forming eight pairs of high-high (H-H), nine pairs of high-low (H-L) and four pairs of low-low (L-L) learners. Leeser found that the H-H learners produced the highest number of LREs, followed by H-L and finally L-L dyads. The implications of these findings are that mixed proficiency pairing may be more conducive to learning than pairing low-proficiency learners (L-L). However, Storch and Aldosari (2013), in a study conducted in EFL classes in Saudi Arabia, found that it is not only proficiency grouping which determines the quantity of LREs but also the role relationship learners form when working in pairs. Employing a model of pair relationships (Storch 2002), the study found that pairs composed of similar proficiency learners (high-high and low-low) were more likely to form collaborative relationships where both learners were involved in deliberating over L2 choices. In mixed proficiency pairs (high-low), one learner was more likely to dominate the activity. In such dominant-passive pairs, there were fewer deliberations over language use and hence fewer LREs.

The assumption that underlies many studies investigating the effectiveness of various tasks is that those tasks or task conditions which elicit more interaction (e.g. more comprehension checks) or more deliberations about language (i.e. more LREs) are more effective for language development. However, as Nakahama et al. (2001) have pointed out, researchers also need to examine the language the learners produce during their interaction, to consider for example, the length, complexity and accuracy of the learners' utterances. There is also a need, as I have noted elsewhere (Storch 2008), to examine the quality of engagement with language evident in the LREs. An LRE may be short, composed only of one or two turns, or quite long and involve multiple turns. These qualitative differences in the level of engagement and their potential impact on language learning have not been sufficiently investigated. Another shortcoming of the research on the effectiveness of oral and written tasks is that there are very few studies which have investigated whether interactions or deliberations over language lead to development in implicit grammatical knowledge as measured by some

form of a post-treatment test. The handful of studies that have attempted to address this gap in research have thus far either used constrained responses exercises such as multiple choice or true/false type exercises (e.g. Swain & Lapkin 2001) thus measuring explicit rather than implicit knowledge or have been small scale (e.g. Storch 2002).

Research on how to teach grammar: Feedback on errors

Another pedagogical intervention which aims to improve learners' grammatical accuracy is *corrective feedback (CF)*. Corrective feedback (feedback on errors) is pervasive in L2 classrooms. It is provided on both oral and written language production and can take a number of different forms. In the past 20 years or so, there has been extensive interest in CF as evident by the large number of articles and dissertations published on this topic.

Corrective feedback on oral production

Corrective feedback on oral language can be implicit or explicit. *Implicit CF* occurs when the corrective intent of the feedback is covert, as in the case of a *recast* or a clarification request (e.g. sorry?). A recast consists of a reformulation of the learner's incorrect utterance while maintaining the meaning of the original utterance. *Explicit corrective feedback* means an overt correction of erroneous utterances with or without explanations. The following examples illustrate the difference between implicit and explicit CF.

Example of implicit CF (recast)

Learner: Last night, I go to the movies.
Teacher: Oh, last night you went to the movies.

Example of explicit CF (overt correction with explanation)

Learner: Last night, I go to the movies.
Teacher: No, you say last night I went to the movies because last night means in the past.

Research on recasts has shown that it is perhaps the most prevalent form of teacher feedback (Ellis et al. 2001; Lyser & Ranta 1997), even in meaning-focused classes. However, there is a debate in the literature on whether recasts are the most effective forms of CF (see Goo & Mackey 2013 and the response by Lyster & Ranta 2013). Using *uptake* (learners repeating

the correct model provided in the recast immediately after receiving the recast) as a measure of effectiveness, studies have shown that uptake is lower following recasts than following more explicit forms of feedback (Lyster 2004; Lyster & Ranta 1997; Lyster & Saito 2010). These findings and their implications are disputed by others (e.g. Goo & Mackey 2013; Mackey & Philp 1998) who question the use of immediate uptake as a measure of effectiveness. Uptake may occur in subsequent turns rather than in the immediate next turn or, as shown by Ohta (2000), the uptake may not be vocalized. However, perhaps the more important consideration in this discussion of uptake is whether uptake is necessarily evidence of noticing the CF or whether it does indeed lead to learning. Uptake is a repetition, and repetitions may be quite mechanical without much attention invested in the act (Panova & Lyster 2002).

Unlike descriptive studies of feedback, Loewen's (2005) study investigated the efficacy of recasts by using a post-test design. Following 17 hours of observation in twelve different ESL classes, Loewen developed individualized tests where learners were asked to recall the linguistic information provided to them in class. The study found a relatively high recall rate: 60 per cent in the short term (1–3 days after the feedback was provided) and 50 per cent 2 weeks later. However, it is questionable whether ability to recall translates into ability to use the structures correctly in free production (i.e. implicit knowledge).

Corrective feedback on written production

The debate about the efficacy of written CF resembles to some extent the debate about explicit grammar instruction. At one extreme are researchers who have argued that there is no merit whatsoever in feedback on grammar in L2 writing (e.g. Truscott 1996, 2007), whereas others (e.g. Ferris 1999, 2006) have argued that such feedback is beneficial. However, scholars on both sides of the debate agree that a more definitive stance on the merit of feedback requires additional research on written feedback (Ferris 2004; Truscott 1999).

Like CF on oral production, CF on writing can take different forms. It can range from indirect feedback, such as editing symbols in the margins (e.g. X) or underlining the erroneous structure, with or without a symbol indicating the type of error, to more direct forms such as writing the correct version above the incorrect one.

Research on written CF has tended to focus on the efficacy of different forms of the feedback (e.g. Bitchener & Knoch 2010a, b; Shintani & Ellis 2013; Van Beuningen et al. 2012), on whether it is better to provide targeted rather than comprehensive feedback (e.g. Ellis et al. 2008) as well as whether CF results in greater accuracy in writing (e.g. Bitchener et al. 2005; Bitchener & Knoch 2010a, b; Hartshorn et al. 2010; Storch &

Wigglesworth 2010a, b; Van Beuningen et al. 2012). For example, the study by Bitchener et al. (2005) compared the effectiveness of direct CF with and without a 5-minute individual conference and no feedback. Three errors were targeted in the feedback conditions: prepositions, simple past tense and use of definite articles. The study found that, although the combined feedback condition (written plus conference) was most effective, gains in accuracy did not show a linear upward trend. Furthermore, the structure targeted by the feedback was an important consideration, with prepositions showing least response to feedback.

The overwhelming conclusion that can be drawn about the efficacy of written CF is the complexity of this issue and the need for better designed studies. What scholars (e.g. Bitchener 2012; Ellis 2010; Ferris 2010; Storch 2010) on reflection now call for is for research which takes into consideration a host of individual learner factors (see Sheen 2011) such as L2 proficiency, language learning aptitude and attitudes as well as immediate (e.g. writing task) and larger (e.g. second versus foreign language classes) contextual factors. We also need longitudinal studies with clearly identified and defined measures of effectiveness and, above all, studies which collect qualitative data which could provide some insights into how learners process the feedback they receive. The following study attempted to incorporate some of the factors mentioned above.

A sample study

The sample study was part of a large-scale project which investigated the efficacy of different forms of written feedback in the short and long term and the impact of a number of individual learner variables including proficiency level and learners' attitudes as well as contextual factors such as task type and mode of composing (individually versus in pairs).[1]

The study examined the efficacy of two forms of feedback on writing: reformulation and editing. *Reformulation* is a technique whereby a native speaker rewrites the text produced by the learner correcting all grammatical errors while preserving the learner's ideas. Editing in this study involved providing learners with a symbol which located their error (e.g. underlining, insertion symbol) and an abbreviation which explained the type of error (e.g. C stood for word choice). All participants who received editing feedback were given a key to the symbols and abbreviations used.

The participants in this study were university students whose ESL proficiency was deemed to be advanced (based on IELTS scores). The participants (n = 48) formed two groups: one group of 12 pairs received feedback in the form of reformulations, the other group received

feedback in the form of editing. All pairs were self-selected and students were paid for their participation. Both forms of feedback were given by the same research assistant, a native speaker who was an experienced ESL teacher.

The participants were required to attend on three different days. On each occasion, they were required to write a report (data commentary) based on a graphic stimulus, showing rainfall patterns in different cities in the world. On Days 1 and 5 (Session 1 and 2), they worked in pairs and their pair talk was audio recorded. On Day 28, they worked individually. Data collected on Day 28 enabled us to investigate the impact of feedback on writing completed beyond the immediate revision session (Day 5) and thus measured development in grammatical accuracy over time. Figure 20.1 summarizes what each session involved.

The following excerpts illustrate the original versions written by the participants and the form of feedback they received. Excerpt 2 provides an example of a reformulation. The reformulation contains two changes: deletion of an indefinite article (an) and changing the word rainfall to rainfalls.

Excerpt 2: Reformulations

Original:

This chart illustrates an average rainfall in each season in the year 2000.

Reformulated version:

This chart illustrates average rainfalls in each season in the year 2000.

Excerpt 3 illustrates the form of editing that participants received. In this example, three errors were identified in the original version: an omission (denoted by an insertion symbol), an error in choice of prepositions (C) and in word form (F).

Day	Duration	Task
Day 1	30 min	Students compose a short report in pairs.
Day 5, session 1	15 min	Pairs receive and discuss the feedback on their report.
Day 5, session 2	30 min	Version containing feedback removed. Pairs given an unmarked version of the text produced on Day 1 and are asked to rewrite it.
Day 28	20 min	Individual learners write a short report based on the same prompt as that used on Day 1.

FIGURE 20.1 *Study design*

Excerpt 3: Editing feedback

Original version:

The rainfall in Lagos city is 240 mm on average in summer, which the highest amongst the other season.

Edited version:

The rainfall in Lagos city is 240 mm on average in summer, which ∧ the

C F

highest *amongst* the other *season*.

Analysis of the data

All written reports (produced by the pairs on Days 1 and 5 and by individual learners on Day 28) were analysed for fluency (length in words), grammatical accuracy and grammatical complexity. Grammatical accuracy measures included the percentage of error-free T-units and of error-free clauses. Complexity measures included clauses per T-unit ratios. The example below (Excerpt 4), taken from our data, shows a T-unit composed of two clauses separated by a slash. Only the first clause was coded as error-free.

Excerpt 4: an example of a T-unit, clauses and accuracy analysis

Beijing has about 160mm of rain in summer/which is around 16 times than that in winter (10mm)

Audio recorded and transcribed pair talk (collected on Day 5 in both sessions) were analysed for LREs. LREs were coded for the nature of engagement, distinguishing between single turn and multi-turn LREs, for their focus (lexis, grammar, mechanics) and for whether the decision reached in the deliberations was correct.

Findings

Analysis of the learners' writing showed that accuracy measures showed the most change over time. Reports written on Day 5 were more accurate than those written on Day 1. Both editing and reformulations led to similar gains in accuracy in the short term (see Table 20.1). However, when we compared accuracy scores on Day 5 with mean accuracy scores on Day 28, we found that the gains were more enduring for the students who received reformulations.

Table 20.1 Mean accuracy scores on Day 1, 5 and 28

	Day 1	Day 5	Day 28
Reformulation			
Error-free T units per T unit	51.47	66.43	61.46
Error-free clauses per clause	60.44	75.11	68.79
Editing			
Error-free T units per T unit	54.47	68.22	58.37
Error-free clauses per clause	64.02	74.74	66.84

Analysis of the pair talk transcripts showed that LREs dealt with a range of grammatical (and lexical) items, not limited to the items which received corrective feedback, and a large proportion (over 75%) of the LREs were resolved correctly. More importantly, editing seemed to generate a larger number of LREs than reformulations, particularly during the processing session on day 5, and these LREs tended to be longer (see Table 20.2).

Table 20.2 LREs generated on Day 5

	No. of LREs	Multi turn LREs	%
Reformulation			
Processing	134	98	73.13
Rewriting	225	187	83.11
Total	*359*	*285*	*79.38*
Editing			
Processing	190	159	83.68
Rewriting	220	206	93.64
Total	*410*	*365*	*89.02*

We were somewhat puzzled by our findings: editing generated greater attention to form (as evident by the larger number and lengthier LREs) than reformulations, yet the impact of reformulation on writing accuracy seemed longer lasting. A closer analysis of the learner talk provided a possible explanation. The analysis revealed that a number of pairs who received reformulations proceeded to memorize and reproduce the reformulated text. These findings suggest that we may need to re-examine the role of memorization in second language acquisition (see also Lantolf & Thorne 2006). Furthermore, these findings highlight the need to consider qualitative data very carefully.

Conclusion

For students interested in doing research on grammar, particularly those who are or plan to become language teachers, the most pressing research topics concern the most effective ways (in terms of tasks and feedback) of teaching grammar. Future studies on tasks need to consider not only how much attention to grammar different tasks generate but also the quality of students' language output (oral or written) when completing such tasks. We also need to investigate whether learners' interactions and engagement with grammar lead to improved grammatical ability by using tests of implicit grammatical knowledge. Such tests should require learners to produce extended speaking or writing, although admittedly when writing, learners are likely to draw on both their implicit and explicit knowledge (Williams 2012). Furthermore, future research on CF needs to investigate the impact of feedback on learners at different levels of L2 proficiency, whether CF may be more effective on some grammatical structures than on others, for some learners more so than for others and the effect of feedback on grammatical accuracy in the long term, as effects may not be apparent immediately. Given rapid developments in online technology, there is also a need to investigate the efficacy and impact of different forms of online delivery of CF (e.g. Sagarra & Abbuhl 2013).

In terms of research methodology, we need studies which collect different types of data (e.g. learners' output, interviews, think-aloud protocols) and analyse data using quantitative and qualitative analyses. Whereas quantitative analysis can employ various measures of grammatical and syntactic complexity, qualitative analysis should also consider learners' engagement with the feedback. Case studies (see Casanave this volume; Storch & Wigglesworth 2010a, b) may be particularly appropriate as they would enable researchers to collect rich, detailed data on the feedback provided, on how learners engage with the feedback and on learners' goals and attitudes to the feedback. Such studies could provide researchers and teachers with clearer insights and explanations about the efficacy of different forms of grammar instruction and corrective feedback. Furthermore, to date, studies on tasks and task implementation as well as on feedback have tended to be conducted largely in ESL and EFL contexts. There is clearly a need for research on grammar in classes that teach languages other than English.

Note

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Resources for further reading

Bitchener, J & Ferris, D 2012, *Written Corrective Feedback in Second Language Acquisition and Writing*, Routledge, New York, NY.

The book addresses controversies regarding written CF by looking at two distinct strands of research into this topic: Second Language Acquisition (SLA) and L2 writing perspectives. The book discusses these perspectives under three overarching themes: theory, research and practice. It is relevant to both L2 researches and teachers. It provides clear directions for research and practical suggestions for implementing CF in the L2 classroom.

Ellis, R 2006, 'Current issues in the teaching of grammar: An SLA perspective', *TESOL Quarterly*, vol. 40, no. 1, pp. 83–107.

This article considers eight key questions relating to grammar pedagogy. These questions include, for example, what grammatical structures to teach, at what L2 proficiency grammar instruction should be introduced and whether to integrate grammar into communicative activities or to teach it separately. In discussing the questions, Ellis provides insights from theory and research and highlights issues which require further investigation.

Ellis, R & Barkhuizen, G 2005, *Analysing Learner Languag*e, Oxford University Press, Oxford.

This book is particularly useful for those wishing to analyse language output. It describes different types of analyses that can be undertaken, different measures that can be employed to assess grammatical accuracy and complexity and provides concrete examples of such analyses and measures.

Nassaji, H & Fotos, S 2011, *Teaching Grammar in Second Language Classrooms: Integrating Form-Focused Instruction in Communicative Contexts*, Routledge, New York, NY.

The book provides a very accessible discussion of various theories in SLA and their stance on grammar instruction as well as a summary of relevant empirical research. It also presents concrete examples of various classroom activities that integrate a focus on grammar and a focus on communication.

Purpura, J 2004, *Assessing Grammar*, Cambridge University Press, Cambridge.

This is a very accessible text which discusses factors which need to be taken into consideration in designing grammar tests. It provides clear examples of various grammar tests and response types.

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