A substantial body of research has investigated how form-focused instruction contributes to language learning, but there has been very little discussion of how the knowledge provided by this research can inform language teaching. This article reviews research that addresses how grammar can best be taught in terms of four theoretically motivated instructional options: (a) structured input, (b) explicit instruction, (c) production practice, and (d) negative feedback. Given the difficulty of reaching firm conclusions based on this research, a number of possibilities for the pedagogic utilization of the information it makes available are considered, based on the distinction between teachers' practical knowledge and technical knowledge. These possibilities are (a) treating the research findings as provisional specifications to be experimented with through teaching, (b) conducting action research, and (c) conducting participatory research involving teachers and researchers working collaboratively. The need for research that investigates how teachers integrate technical knowledge into their personal pedagogical systems is also recognized.

This article addresses the relationship between language teaching and research. It also examines what current second language acquisition (SLA) research has to say about the effectiveness of different ways of teaching grammar. These two purposes are related. An account of instructional options serves as a basis for proposing how SLA research and teaching might best inform each other.

The social worlds of the teacher and the researcher are often very different (Crookes, 1997). Teachers operate in classrooms where they need to make instantaneous decisions regarding what and how to teach. Researchers, more often than not, work in universities, where a system of rewards prizes rigorous contributions to a theoretical understanding of issues. Teachers require and seek to develop practical knowledge; researchers endeavor to advance technical knowledge. This distinction, then, encapsulates the divide that often exists between the two.
PRACTICAL VERSUS TECHNICAL PROFESSIONAL KNOWLEDGE

The distinction between technical and practical knowledge is common in the literature dealing with the practice of professionals such as doctors, lawyers, and teachers (see Calderhead, 1988; Eraut, 1994). Technical knowledge is explicit; that is, it exists in a declarative form that has been codified. For these reasons it can be examined analytically and disputed systematically. Technical knowledge is acquired deliberately either by reflecting deeply about the object of enquiry or by investigating it empirically, involving the use of a well-defined set of procedures for ensuring the validity and reliability of the knowledge obtained. Technical knowledge is general in nature; that is, it takes the form of statements that can be applied to many particular cases. For this reason, it cannot easily be applied off-the-shelf in the kind of rapid decision making needed in day-to-day living.

Over the years, SLA research has provided a substantial body of technical knowledge about how people learn an L2. This is reflected in the ever-growing set of technical terms used to label this knowledge—for example, overgeneralization and transfer errors, fossilization, order and sequence of acquisition, input and intake, noticing, negative and positive evidence (see the glossary in R. Ellis, 1994). This technical knowledge and the terms that label it constitute goods that are constantly being produced by SLA researchers.

In contrast, practical knowledge is implicit and intuitive. Individuals are generally not aware of what they practically know. For example, I know how to tie my shoelace, but I have little awareness of the sequence of actions I must perform to do this and could certainly not describe them very well. Practical knowledge is acquired through actual experience by means of procedures that are only poorly understood. Similarly, it is fully expressible only in practice, although it may be possible, through reflection, to codify aspects of it. The great advantage of practical knowledge is that it is proceduralized and thus can be drawn on rapidly and efficiently to handle particular cases.

Practicing professionals are primarily concerned with action involving particular cases, and for this reason they draw extensively on practical knowledge in their work. Freidson (1977), for example, describes how medical practitioners operate:

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1 The distinction between technical and practical knowledge, found in discussions of professional expertise, is analogous with the distinctions between explicit and implicit L2 knowledge and between declarative and procedural L2 knowledge, both of which are common in the SLA literature.
One whose work requires practical application to concrete cases simply cannot maintain the same frame of mind as the scholar or scientist: he cannot suspend action in the absence of incontrovertible evidence or be skeptical of himself, his experience, his work and its fruit. . . . Dealing with individual cases, he cannot rely solely on probabilities or on general concepts or principles: he must also rely on his own senses. By the nature of his work the clinician must assume responsibility for practical action, and in so doing he must rely on his concrete, clinical experience. (as cited in Eraut, 1994, p. 53)

Similarly, teachers, in the act of teaching, rely to a large extent on their practical knowledge (Calderhead, 1988).

Of course, teachers do make use of technical knowledge in planning lessons, choosing and writing teaching materials and tests, and deciding what methodological procedures to utilize. This corresponds to what van Lier (1991) has referred to as the planned aspect of teaching. However, there is also an improvised side. To accomplish a lesson, teachers are faced with the need to make countless unplanned decisions about what and how to teach. As van Lier describes it, “In any lesson, planned and improvised actions and interactions may be tightly interwoven” (p. 47). Teachers, however, often experience difficulty in integrating technical and practical knowledge. Pennington and Richards (1997), for example, report on the failure of five novice Cantonese teachers of English in Hong Kong to implement in their classroom teaching the communicative teaching principles and practices they were taught during a BA course. They suggest that one reason for this failure was the teachers’ preexisting schema for teaching based on their learning experiences as students in the Hong Kong school system. In other words, faced with the need to survive in the classroom, these teachers rejected their technical knowledge and instead relied on their practical knowledge. More experienced teachers may be more successful in interweaving the two types of knowledge but, as the literature on professional activity makes clear, this is no easy task.  

The crucial issue, then, is the nature of the relationship between technical and practical knowledge. To what extent and in what ways can the technical knowledge derived from research influence actual teaching? How can technical knowledge be utilized in the creation of the kind of practical knowledge with which teachers must necessarily work when they improvise lessons? Can practical knowledge contribute to technical knowledge? How? Before turning to these questions, I examine research that has addressed the effects of form-focused instruction on L2
acquisition. I have chosen this area because it is one of obvious potential relevance to language teaching.

OPTIONS IN FORM-FOCUSED INSTRUCTION

Early focus-on-form studies (e.g., R. Ellis, 1984; Pienemann, 1984) were primarily concerned with finding out whether form-focused instruction worked (i.e., whether it enabled learners to acquire the structures they had been taught). These early studies did not distinguish different kinds of form-focused instruction. Instead, they tended to treat focus on form as a generic phenomenon to be contrasted with focus on meaning. Subsequently, however, researchers have turned their attention to another question—what kind of form-focused instruction works best?—that accords more closely, perhaps, with the teacher’s perspective. It is this question that motivates the following survey of research.

One way of characterizing differences in instruction is in terms of options. Stern (1992) sees the identification of options as a way of proceeding beyond the concept of method, which is now generally recognized as too crude a concept on which to base either research or teaching (Kumaravadivelu, 1994). One set of options Stern considers is what he refers to as teaching strategies. It is possible to describe a number of such strategies for form-focused instruction based on what is known about how learners acquire an L2.

The particular model of L2 acquisition that will serve as a basis for identifying these options is derived from a computational metaphor. There are, of course, other metaphors, which doubtlessly suggest other instructional options. However, the computational metaphor is currently dominant in SLA (see Lantolf, 1996, for a discussion). According to this metaphor, L2 learners are viewed as intelligent machines that process input in a mental black box. This contains wired-in or previously acquired mechanisms that enable learners to internalize new knowledge for use in output tasks. The particular computational model that informs the discussion of options below is shown in Figure 1.

The model indicates a number of points where form-focused instruction can intervene in interlanguage development. In the case of Point A, instruction is directed at input (i.e., attempts are made to contrive oral or written texts in such a way that learners are induced to notice specific target features as they try to comprehend the texts). Following VanPatten (1993), this option will be referred to as structured input. Point B involves explicit instruction (i.e., attempts to develop learners’ explicit understanding of L2 rules—to help them learn about a linguistic feature). Point C entails production practice (i.e., creating opportunities for learners to practice producing a specific target structure). Point D consists of
negative feedback, showing learners when they have failed to produce a structure correctly. Whereas Point A provides learners with positive evidence (i.e., examples of how a particular grammatical structure works), Point D offers negative evidence (i.e., indications of erroneous use and perhaps also corrections).

Two general comments are in order. The first is that form-focused lessons typically involve combinations of these options. For example, explicit instruction, production practice, and negative feedback are often combined. This makes good sense from the teacher’s point of view as it optimizes the potential effect of the instruction. However, it is problematic from the researcher’s point of view because it is difficult to determine which specific option is responsible for any learning that takes place.

The second general point is to emphasize that these four options constitute macro-options. Each one can be broken down into more delicate micro-options. For example, there are many ways of delivering production practice depending on whether the pedagogic aim is to carefully control learners’ output or to provide opportunities for relatively free production using the targeted structure. Both teachers and researchers have to decide what micro-options to use. The problem is that although the choice of macro-options can be theoretically motivated by the kind of computational model shown in Figure 1, there is often no theoretical basis in SLA for selecting micro-options. For example, structured input can require students to demonstrate their understanding by matching sentences to pictures or by responding to commands through actions, but there is no obvious rationale in SLA for preferring
one micro-option over the other. Such options have a pedagogical status but no obvious psycholinguistic justification.

Below the macro-options are illustrated with sample teaching materials, and recent research relating to each option is reviewed. In the case of the structured-input option, a fairly comprehensive review is included as this is an area that has attracted considerable interest from SLA researchers and that also offers an innovative alternative to traditional grammar teaching. Research directed at the other options is examined more selectively, for reasons of space. One of the purposes of this review is to demonstrate some of the problems teachers may have in making use of the technical knowledge provided by the research.

The Structured-Input Option

This option asks learners to process input that has been specially contrived to induce comprehension of the target structure. Learners are required to listen to or read texts consisting of discrete sentences or continuous discourse and to indicate their understanding of them, for example by carrying out a command, drawing a picture, ticking a box, or indicating agreement or disagreement. The learners’ responses to the input stimuli are nonverbal or minimally verbal; they do not involve actually producing the structure.

Here is an example of a grammar task that makes use of this option. The target structure is predicate adjectives (e.g., the distinction between *boring* and *bored*). L2 learners have been observed to confuse these, producing sentences such as *I am boring with you* (Burt, 1975). In this task, the learners have to simply indicate whether they agree or disagree with a series of statements.

An Example of a Structured-Input Task

Do you agree or disagree with these statements?
1. Quiet people are boring.
2. I am bored when someone tells a joke.
3. People who gossip a lot are very irritating.
4. I get irritated with small talk.
5. It is interesting to talk about yourself.
6. I am interested in people who always talk about themselves.
[etc.]

The psycholinguistic rationale for the structured-input option is that acquisition occurs when learners attend to the new structure in input rather than when they try to produce it. A number of recent studies have investigated the relative effects of structured input and production
practice on the acquisition of specific linguistic features. In interpreting the results of these studies it is important to consider the kinds of tests used to measure the learning outcomes. All the studies examined below used both comprehension-based tests, which favor the structured-input group, and production tests, which favor the production-practice group. However, most of the studies to date have not incorporated any test of the learners’ ability to use the target structure in communicative speech. A further issue in this research is whether the instruction included explicit explanation of the target feature in addition to practice involving structured-input or production activities.

VanPatten and Cadierno (1993) compared traditional production-oriented practice with oral structured-input practice directed at groups of university students. Both groups also received explicit instruction in the target structure. The focus of this study was the positioning of object clitic pronouns in Spanish (e.g., *Te invito para el sábado*). The subjects were tested by means of a discrete-item listening test and a discrete-item written production test. The results showed that the structured-input group outperformed the production-practice group on the listening comprehension test and did just as well on the written production test. These results were repeated in follow-up tests administered 1 month later. VanPatten and Cadierno suggest that whereas the production-based instruction only contributed to explicit knowledge, the comprehension-based instruction created intake that led to implicit knowledge. Cadierno (1995) reports almost identical results in a study that focussed on a morphological feature (Spanish past tense forms).

Similar results were also obtained by Tanaka (1996), who compared the relative effects of structured input and production practice on the acquisition of English relative clauses by 123 high school students in Japan. In this study, both groups again received explicit instruction relating to the target structure but were given different kinds of practice. A comprehension test and a controlled production test were administered before the treatment, 5 days after the treatment, and again 2 months later. On both the immediate and the delayed comprehension posttest, the structured-input group outperformed the production-practice group. In fact, the production-practice group showed hardly any improvement on pretest scores. On the production tests, both groups showed gains on their pretest scores. The production-practice group obtained significantly higher scores than the structured-input group on the immediate posttest but not on the delayed posttest. This suggests that structured input in conjunction with explicit instruction resulted in durable learning that was available for use in both comprehension and production tasks. In contrast, production-based instruction in conjunction with explicit information resulted in learning that was available for use only in production and that atrophied markedly over time.
A limitation of these studies was the kinds of tests used to measure production. The discrete-point tests they used do not show convincingly that the comprehension treatment was effective in developing the implicit knowledge needed for communication. To address this issue, VanPatten and Sanz (1995) compared a group receiving explanation of object clitic pronouns followed by structured-input practice with a control group that received no instruction directed at the target structure. This study incorporated a number of different tests (e.g., sentence completion and video narration) in written and oral versions. The structured-input group significantly improved their accuracy in producing the target structure (clitic pronouns in L2 Spanish) on all the written tests, outperforming the control group, which showed no improvement. This confirmed the results of the earlier study. However, no statistically significant difference was found between the structured-input group and the control group on the oral video narration test—an integrative test involving unplanned production and, therefore, arguably a measure of implicit knowledge. The study thus does not provide convincing evidence that input-processing instruction led to changes in implicit knowledge.

In all of these studies, the instruction involved two focus-on-form macro-options—explicit explanation combined with structured input. A question of some importance, then, is whether the advantage found for the input-processing groups in these studies was due to explicit explanation, structured input, or a combination of the two. VanPatten and Oikkenon (1996) set out to investigate this using fourth-semester high school students. The focus was again object pronoun placement in Spanish. There were three experimental groups: Group 1 received a grammatical explanation together with structured-input practice, as in the earlier studies, Group 2 received just explicit instruction, and Group 3 received just structured-input practice. On a discrete-item comprehension test, Groups 1 and 3 both performed better than Group 2, but there was no difference between Groups 1 and 3. On the production test, Group 1 but not Group 3 performed better than Group 2, but the difference between Groups 1 and 3 was not statistically significant. VanPatten and Oikkenon conclude that “significant improvement on the interpretation test is due to the presence of structured-input activities and not to explicit information” and that even on the production test “the effects of explicit information are negligible” (p. 508). Note, however, that explicit instruction did lead to better performance on both tests and also that the tests used in this study did not include a measure of communicative performance.

Two recent studies have produced very different results. Salaberry (1997) set out to replicate the VanPatten and Cadierno (1993) study with similar subjects and the same grammatical focus (clitic pronouns in
Spanish. He used three tests—a comprehension test, a discrete-item production test, and a free-narration test based on a video. These tests were administered before the instruction, immediately after the instruction, and 1 month later. Both experimental groups improved on the comprehension tests with the production-practice group performing as well as the structured-input group. No improvement in either group was evident on the discrete-item production tests, but Salaberry acknowledges that this may have been because all the subjects achieved high scores on the pretest, thus leaving little room for improvement. Also, as in VanPatten and Sanz’s (1995) study, the two groups did not differ on the free-narration test, although Salaberry notes that this test produced few obligatory occasions for object clitic pronouns.

Finally, the results of DeKeyser and Sokalski’s (1996) study also failed to show an advantage for structured input. The grammatical focus was clitic pronouns (as in the previous VanPatten studies) and the conditional form of the verb in Spanish, a structure that the researchers argue is easy to perceive but difficult to produce. In the case of object clitic pronouns, the immediate posttests (which were highly controlled in nature) showed that the structured-input group did better on the comprehension test whereas the production-practice group did better on the production test. However, on the delayed posttest no difference between the groups on either test was evident. For the conditional, production practice resulted in better scores on both the comprehension and the production tests, but again there was no difference between the groups on the delayed test. However, the pretest scores for both structures were high, leaving little room for further learning.

It is not easy to reach firm conclusions based on these studies as (a) the results of the different studies are not in agreement, (b) there are obvious design differences in the studies (e.g., in the level of knowledge of the target structures displayed by the subjects in pretests), and (c) to date the research has not shown that structured input has any effect on unplanned language use. Thus, the technical knowledge afforded by the research on structured input is ambivalent. Perhaps the most that can be said is that it suggests that structured-input practice may provide a useful alternative to production practice.3

Explicit Instruction

The principal choice regarding explicit instruction is whether to teach explicit rules directly or to develop activities that enable learners to

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3 It is also worth noting that, to date, no study has investigated whether combining structured input and production practice results in better learning than using these options separately.
discover the rules for themselves. Direct explicit instruction takes the form of oral or written explanations of grammatical phenomena. They can stand by themselves or can be accompanied by exercises in which learners attempt to apply the rule they have learned. In indirect explicit instruction, learners complete consciousness-raising tasks in which they analyze data illustrating the workings of a specific grammatical rule. Here is an example of a consciousness-raising task directed at helping learners discover when to use *at*, *in*, and *on* in adverbial time phrases.

An Example of a Conscious-Raising Task

1. Underline the time expressions in this passage.

   I made an appointment to see Mr. Bean at 3 o’clock on Tuesday the 11th of February to discuss my application for a job. Unfortunately, he was involved in a car accident in the morning and rang to cancel the appointment. I made another appointment to see him at 10 o’clock on Friday the 21st of February. However, when I got to his office, his secretary told me that his wife had died at 2 o’clock in the night and that he was not coming into the office that day. She suggested I reschedule for sometime in March. So I made a third appointment to see Mr. Bean at 1 o’clock on Monday the 10th of March. This time I actually got to see him. However, he informed me that they had now filled all the vacancies and suggested I contact him again in 1998. I assured him that he would not be seeing me in either this or the next century.

2. Write the time phrases into this table.

<table>
<thead>
<tr>
<th>at</th>
<th>in</th>
<th>on</th>
</tr>
</thead>
<tbody>
<tr>
<td>at 3 o’clock</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Make up a rule to explain when to use *at*, *in*, and *on* in time expressions.

   Fotos and Ellis (1991) investigated the relative advantages of direct and indirect consciousness-raising. We found that both options resulted in statistically significant gains in understanding the rule for dative alternation in two groups of college-level Japanese students. In one group, direct explicit instruction resulted in higher scores on a grammaticality judgement test, but in the other the consciousness-raising task proved equally effective. In a more elaborate follow-up study, Fotos (1994) found that indirect instruction worked as well as direct instruction in teaching explicit knowledge of three different structures (adverb placement, dative alternation, and relative clauses) to 160 Japanese university students.

   There are a number of reasons for favoring the indirect option. An invitation to discover rules for themselves may be more motivating to
learners than simply giving them the rules. Also, if consciousness-raising tasks are performed in groups and the target language is used as the medium for solving the problems they pose, the tasks double as communicative tasks. Learners can as well talk about grammar as talk about any other topic.

Other research has investigated the relative effects of teaching grammar deductively by means of direct explanation versus teaching it inductively through controlled production practice. This comparison underlay the global method studies of the 1960s (e.g., Scherer & Wertheimer, 1964; Smith, 1970), which failed to demonstrate whether one method (e.g., the grammar-translation or the audiolingual method) was better than another. Early small-scale studies (e.g., Hammerley, 1975; Seliger, 1975), however, found some advantage for explicit instruction, particularly when the target structure was relatively simple.

A number of recent experimental studies, based on studies in cognitive psychology using artificial languages (see Reber, 1989) confirm these early results. For example, Robinson (1996) investigated 104 adult students of English (mainly Japanese) learning both an easy rule (subject-verb inversion after an adverbial of location as in Into the house ran John) and a complex rule (pseudoclefting as in Where Mary and John live is in Chicago not New York). The subjects viewed the sentences on a computer screen under varying conditions. One group (labelled the implicit group) was simply asked to remember the sentences. A second group (called the incidental group) was given comprehension questions about the sentences, to which they answered yes or no. A third group (the rule-search group) was asked to identify the rules illustrated by the sentences, and the fourth group (the instructed group) first received direct explanations of the rules and then tried to apply them to the sentences. The group receiving explicit explanations outperformed all the other groups on a grammaticality judgement test administered immediately after the treatment. Other recent studies (e.g., DeKeyser, 1994, 1995; N. Ellis, 1993) have produced similar results in favor of explicit instruction.

However, there are obvious problems in applying the results of these studies to language pedagogy. One is that the studies often did not include a delayed test. It is not clear, for example, whether the advantage Robinson (1996) found for the group that received explicit instruction was maintained over time. More seriously, the studies did not include tests of communicative behaviour. For example, it can be argued that the grammaticality judgement test in Robinson’s study favored the explicit instruction group because it could be answered using explicit knowledge.

Once again, then, the results of the research do not afford conclusions that can be readily applied to language pedagogy. Fotos’ (1994) research suggests that if explicit knowledge is the goal, it may be effectively taught via consciousness-raising tasks. However, there is no
clear evidence to date that explicit instruction of any kind leads to greater grammatical accuracy in communicative language use.

**Production Practice**

Devices for eliciting production of target structures range on a continuum from highly controlled text-manipulation exercises (e.g., a substitution drill) to much freer text-creation tasks, in which learners are guided into producing their own sentences using the target structure (see the example below). A well-established methodological principle in current grammar teaching is to begin with text-manipulation and then move to text-creation activities. In this way teachers hope to push the learner from controlled to automatic use of the target structure.

**Examples of Production-Practice Tasks**

A. Text manipulation
   Fill in the blanks in these sentences.
   1. Mr. Short was born ___ 1944 ___ a Tuesday ___ May ___
      two o'clock ___ the morning.
   2. Mr. Long was born ___ 1955 ___ a Saturday ___ November ___
      five o'clock ___ the afternoon.
   [etc.]

B. Text creation
   Find three people who know
   • the year they were born
   • the day they were born
   • the time of day they were born
   Complete this table about the three people.

<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
<th>Day</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
   1.    |      |      |            |
   2.    |      |      |            |
   3.    |      |      |            |

   Now tell the class about the three people you talked to.

Learners require time to integrate new grammatical structures into their interlanguage systems. Many structures involve learners passing through a series of transitional stages before they arrive at the target language rule (see R. Ellis, 1994, chapter 3). It is uncertain, then,
whether production practice directed at such structures in the course of a lesson, or even a series of lessons, can enable learners to construct the kind of knowledge needed for communication. Furthermore, learners have their own built-in syllabus (Corder, 1967), according to which they acquire some structures before others. If the production practice is directed at a structure the learners are not yet ready to acquire, it is likely to fail (Pienemann, 1984) or to result in some misrepresentation of the rule (Eubank, 1987). It was problems such as these that led Krashen (1982) to reject any major role for form-focussed instruction in L2 acquisition.

There may still be a place for production practice, however. Schmidt (1994) notes that there is a skill aspect as well as a knowledge aspect to L2 learning. Thus, although production practice may not enable learners to integrate entirely new grammatical structures into their interlanguages, it may help them use partially acquired structures more fluently and more accurately. Indeed, the results of the DeKeyser and Sokalski (1996) study discussed earlier could be interpreted as demonstrating precisely this. Other focus-on-form studies (e.g., Harley, 1989; Spada & Lightbown, 1993; White, Spada, Lightbown, & Ranta, 1991), which have included plentiful production practice (albeit in conjunction with other macro-options), have also shown that clear and sometimes durable gains in knowledge can occur.

An interesting question is whether production practice based on text manipulation or on text creation is best suited to improving learners' control over structures. Castagnaro (1991) examined the effects of two kinds of production practice on Japanese college students' ability to produce complex noun phrases. A control group was given a picture of a kitchen and simply practiced labelling the objects in it. One experimental group took part in a repetition and blank-filling exercise based on the same picture and designed to practice complex noun phrases. The second experimental group was asked to work in pairs to produce their own sentences describing the various kitchen objects. The learners in this group did best in a posttest that measured their ability to produce complex noun phrases.

The results of the studies reviewed in this section suggest that it would be premature to abandon approaches to teaching grammar that emphasize production practice. The task facing teachers is to decide when production practice can assist their students and when it is not likely to succeed—a task that calls for considerable technical knowledge. Teachers also need to consider what kind of production practice to provide. To date, there is insufficient evidence to show that one kind of practice (e.g., free practice) works better than another (e.g., controlled practice).
Negative Feedback

Negative feedback shows learners that an utterance they have just produced is incorrect. It serves, therefore, to help learners notice the gap between their own deviant productions and grammatically correct productions. Negative feedback often occurs in conjunction with production practice. However, there are reasons for believing that it may prove more effective if it takes place in the context of activities in which the primary focus is on meaning rather than on form. Johnson (1988) has argued that “learners need to see for themselves what has gone wrong, in the operating conditions in which they went wrong” (p. 93). Below is an example of the kind of correction that arises naturally in communication.

Negative Feedback as a Recast

A: I born on 1944.
B: Oh, you were born in 1944.
A: Yeah, in 1944.

This type of correction is known as a recast. It involves an interlocutor (such as the teacher) reformulating a learner’s utterance or part of an utterance in accordance with target-language norms. Lyster and Ranta (1997) found that recasts were the most common form of correction in French immersion lessons. They also identified five other types of feedback: (a) explicit correction, in which the teacher provides the correct form; (b) clarification requests, in which the teacher indicates an utterance has not been understood; (c) metalinguistic feedback, in which the teacher uses technical language to refer to an error (e.g., “It’s feminine”); (d) elicitation, in which the teacher attempts to elicit the correct form from the student; and (e) repetition, in which the teacher simply indicates an error has been made by repeating all or part of a learner’s utterance. A question of obvious interest to teachers is which of these types of feedback is most effective. One way of answering this is by examining learners’ uptake (i.e., learners’ attempts to repair their own errors). Lyster and Ranta found that recasts were the least likely type of feedback to elicit student repair. Elicitation led to the most uptake, evenly divided between successful (i.e., the student repaired the error) and unsuccessful. Metalinguistic feedback produced slightly less overall uptake but had a similar success rate.

Of course, uptake does not show that students have learned the correct feature. To demonstrate this, it is necessary to find out whether students avoid making the same error on subsequent occasions. Here, the results of the research are mixed. In a review of research into the
effects of corrective feedback on learners’ written compositions, Truscott (1996) concluded that feedback did not help learners eliminate errors from their subsequent written work. However, a number of recent classroom studies suggest that negative feedback in the context of communicative activities may promote interlanguage development.

Lightbown and Spada (1990) report that when teachers corrected learners’ errors during communicative lessons, the frequency of at least some errors (e.g., *it has* . . . instead of the correct *there is* . . .) was reduced. Doughty and Varela (1995) investigated the effects of negative feedback on learners’ communicative output. Sixth- to eighth-grade ESL learners were given negative feedback (in the form of recasts) focussing on past tense errors in their oral and written lab reports of scientific experiments. Doughty and Varela report that over a 6-week period the learners given this feedback showed gains in terms of both their use of correct target language forms and their use of various interlanguage forms used to mark pastness (e.g., they used the incorrect *toke* where before they had used *take*). These gains were evident in both their oral and written lab reports. In contrast, a control group showed gains only in the use of interlanguage markers of pastness in their written lab reports (i.e., there were no overall gains in the use of target forms and no gains in the use of interlanguage past forms in their oral production). This research demonstrates that negative feedback directed at errors made in communication can accelerate interlanguage development.

There remains considerable uncertainty regarding the value of negative feedback. According to some theorists (e.g., Krashen, 1982), correction does not contribute to interlanguage development. However, as we have seen, there is growing evidence that negative feedback can contribute to the kind of implicit knowledge used in communication. Yet very little is known about which kind of feedback is most effective. Here is an area, then, where teachers have no choice but to rely on their practical knowledge. Indeed, given that error correction involves attending to a variety of social and affective factors (see Allwright, 1975), technical knowledge about what works best for language acquisition can never provide a complete basis for correcting errors.

**BRIDGING THE GAP**

The preceding brief discussion of four macro-options for delivering form-focused instruction together with examples of recent research provides a basis for examining more closely the relationship between research and teaching. How can the gap between technical and practical knowledge be bridged?
Is the Gap Worth Bridging?

Educational researchers are committed to establishing a solid knowledge base through research that is valid, reliable, and trustworthy. The assumption is that this knowledge base can inform and improve language pedagogy. There are problems with such a view, however, concerning both the quality of the research and the nature of the relationship between researcher and teacher.

The research examined in this paper is fairly typical of the kind of focus-on-form investigations currently being undertaken. The studies generally demonstrate a sophisticated awareness of the requirements of experimental research (e.g., the importance of pretesting and the need for control groups). Nevertheless, there are reasons for exercising caution about the findings. There are methodological problems. For example, not all the studies used random sampling, a standard requirement of experimental research, for the simple reason that it is often not possible or ethical in educational research. Also, many of the studies investigated combinations of instructional options, making it difficult to determine which option was responsible for the effects observed. But even if these methodological problems were to be overcome, doubts about the generalizability of the research would remain. It does not follow that the results obtained for a specific group of learners being taught a specific grammatical structure apply to all the individuals in a group, to other groups, or to other grammatical structures. Given the enormous complexity of both teaching-learning situations and L2 acquisition, it is simply not possible to advocate general solutions on the basis of 1, 2, or even 20 studies. Furthermore, the conflicting nature of the results so far obtained, itself a reflection of the complexity referred to above, precludes firm proposals.

The assumption that research can provide a knowledge base for making pedagogical decisions is also dangerous because it commonly implies a particular power relationship between researcher and teacher. It places researchers at the top of a social hierarchy, giving them the responsibility for making decisions, and teachers at the bottom, consigned to implementing research-driven curricula, a state of affairs commonly criticized in the educational literature (e.g., Carr & Kemmis, 1986). Clarke (1994) has inveighed against such a state of affairs in TESOL, arguing that communication becomes dysfunctional when teachers are placed in a position of receiving “proclamations” from researchers. He argues teachers should “keep their own counsel regarding what works and does not work” (p. 23).

It might be argued, therefore, that if the research cannot afford general solutions and if the utilization of research findings implies an inequitable relationship between researcher and teacher, teachers might
do better to rely on their own practical knowledge, as Clarke (1994) advocates. Yet this conclusion is not warranted. It derives from a failure to address how practical knowledge and technical knowledge can interact.

**Models for Relating Research to Teachers' Practice**

Weiss (1977) outlines three models for relating research-based knowledge to professional activity. According to the *decision-driven model*, the starting point for research is not a theory of L2 acquisition or a previous piece of research but rather some practical issue of direct concern to teachers. The form-focussed research examined in this article was theoretically driven, but it was also motivated by issues of practical importance to teachers. How best to teach grammar is a question that many teachers feel the need to address. Investigating different options is a better way of tackling the problem of grammar teaching than simply abandoning it in favor of communicative language teaching, as some have suggested (e.g., Krashen, 1982). Williams (1995) points out that the current research suggests ways in which a focus on form can be incorporated into communicative activities. However, research findings do not provide a basis for proclaiming solutions to practical problems. Rather, as Cronbach (1980) has argued, such findings should be used interpretatively rather than applicatively.

Weiss's second model is the *knowledge-driven model*, in which the primary goal of research is to advance the knowledge base of a discipline by constructing and testing explicit theories or by developing research methodology. The research on options in grammar teaching was partly undertaken with this function in mind. The specific options that have been studied were based on theoretical accounts of how learners acquire an L2. The research on structured input, for example, is premised on the hypothesis that interlanguage development occurs as a result of processing input, not output. Krashen (1983) has argued that it is not research per se that should be used to address pedagogical issues but rather the theory derived from the research. Theory, he claims, provides teachers with "an underlying rationale for methodology in general" (p. 261) and thus helps them to adapt to different situations.

The knowledge-driven model has been a major influence in the development of teacher education programs in TESOL. Stern (1983), for example, has argued the case for developing a foundation of knowledge in applied linguistics, which includes SLA. He argues commonsensically that judgements that are based on "sound theoretical foundations" (p. 2) will produce better results than those that are not. Most teacher educators, myself included, would concur. Thus, teachers
who are familiar with the research on options are better equipped to
develop valid theories of their own (Williams, 1995) and, therefore, are
more likely to become effective teachers of grammar. There is, however,
a major problem. The knowledge-driven model assumes that teachers
will be consumers of research-based knowledge but does not address how
this consumption will take place. How can/do teachers make use of the
research on form-focussed options?

The third of Weiss's (1977) models—the interactive model—addresses
this crucial issue. Here technical and practical knowledge are interre-
lated through the performance of some professional activity. The way in
which this achieved is highly complex. One way of facilitating this
process is for teachers to treat the results of research they find interesting
as provisional specifications to be tested out in their own classrooms. As
Stenhouse (1975) has put it,

The crucial point is that the proposal (from research) is not to be regarded as
an unqualified recommendation but rather as a provisional specification
claiming no more than to be worth putting to the test of practice. Such
proposals claim to be intelligent rather than correct. (p. 25)

In a sense, then, the research serves as a heuristic to guide teachers’
experimentation in their own classrooms.

An example of a provisional specification is the finding that the
structured-input option for teaching grammar may result in deeper and
more durable learning than traditional production practice. To date,
however, the research on this option has investigated only a few popula-
tions of learners and only three or four grammatical structures. Are the
findings of this research applicable to other groups of students and other
structures? Accepting that the findings of such research are no more
than provisional obviates the problems of generalizing research findings,
referred to earlier. Teachers can investigate the relevance of research
findings to their own classroom either informally by simply trying out
new ideas or systematically through action research, using their own
practical knowledge of teaching to operationalize technical constructs
(such as structured input). The case for using action research in this way
in our field has been made by, among others, Crookes (1993), Nunan
(1990), Widdowson (1990), and Williams (1995). Action research is seen
both as a way of improving teaching and as a way of overcoming the
"dysfunctions of the theory/practice discourse" that Clarke (1994)
objects to.

A second way of interrelating the two kinds of knowledge is for
researchers and teachers to work collaboratively. However, collaboration
often takes the form of researchers co-opting teachers into working on
questions derived from theory or previous research. In other words, it is
the researcher’s perspective that is paramount, which reinforces the hierarchical divide between researchers and teachers. However, there are other forms of collaboration. Louden (1992) describes a longitudinal project he undertook with Joanna, an elementary school teacher. Louden’s goal was “to understand from the inside how reflection contributes to the action teachers take in their own classroom” (p. 178). He sought to blur the distinction between himself as researcher and his subject as teacher. Thus, although he drew on his technical knowledge to propose solutions to problems that arose in the course of teaching, it was Joanna who decided what to accept and what to reject. Louden’s work provides an example of how Weiss’s (1977) interactive model might be effectively implemented. It suggests a profitable line for applied focus-on-form research.

CONCLUSION

In this article, I have suggested that the notion of options provides a basis for both researching and conducting form-focussed instruction. However, the identification of a common framework for research and teaching does not ensure their symbiosis. To achieve this, it is necessary to consider what kinds of research are most likely to lead to interdependence.

I have discussed three types of research. One is theoretical-pedagogical research, in which the goal is to develop technical knowledge by addressing theoretical issues of potential practical relevance to teachers. This type of research is researcher led (although it may also involve teachers). It is manifest in all the studies of form-focussed instruction referred to in this article. Such research is of value to teachers in that it is a source (although not the only one) of provisional specifications that individual teachers can test out informally through their own teaching. The second type of research is action research, in which teachers take responsibility for identifying their own research questions and conducting their own investigations. Action research provides a more systematic means by which teachers can investigate the provisional specifications provided by theoretical-pedagogical research. Finally, there is participatory research, in which a researcher and a teacher collaborate inside the teacher’s classroom, pooling their expertise in a manner that gives the teacher control over decision making.

Surprisingly, very little research has explored how teachers arrive at decisions about what grammar to teach and when and how to teach it, a notable exception being Borg (this issue). That study documents the personal pedagogical system evident in one teacher’s teaching of grammar. This system was derived in part from his training as a language
teacher and in part from his own experience as a language learner and teacher. Such studies can also illuminate in what ways teachers interpret and personalize research findings in their teaching. For, as Eraut (1994) points out, teachers do not simply act on technical knowledge but transform it through action. Very little is known about how this takes place in the grammar class.

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