In Search of the Knowledge Base of Language Teaching: Explanations by Experienced Teachers

Bill Johnston and Karin Goettsch[1]

Abstract: This paper examines aspects of the knowledge base that experienced English as a second language (ESL) teachers draw on in their teaching, primarily in giving explanations of grammar and other language points. The paper focuses on three categories of teacher knowledge: content knowledge, pedagogical content knowledge, and knowledge of learners (Shulman, 1987). Observations of and interviews with four experienced ESL grammar teachers about their classroom explanations are analyzed using this framework. The results indicate that these three categories of knowledge are intertwined in complex ways as they are played out in the classroom and in teacher thinking. This knowledge base and the actions it leads to are further seen to be fundamentally process-oriented. It is argued that the knowledge base itself should be integrated into language teacher education programs and that its complex and process-oriented nature needs to be taken into account in language teacher education curriculum design.

Résumé : Cet article examine des aspects de la base de connaissance qu'emploient les professeurs expérimentés d'anglais langue seconde (ALS) dans leur enseignement, principalement en donnant des explications de grammaire et d'autres points d'usage. L'article se concentre sur trois catégories de la connaissance professionnelle : la connaissance du contenu, la connaissance du contenu pédagogique et la connaissance des étudiants (Shulman, 1987). Des observations et des entrevues auprès de quatre professeurs expérimentés d'ALS spécialisés dans l'enseignement de la grammaire, au sujet de leurs explications dans la salle de classe sont analysées en utilisant ce cadre. Les résultats indiquent que ces trois catégories de connaissance s'entrelacent de façon complexe pendant qu'elles sont jouées dans la salle de classe et dans la pensée des professeurs. De plus cette base de connaissance et les actions qui en résultent sont vues comme étant orientées fondamentalement vers le processus. On soutient qu'il faut intégrer la base de connaissance elle-même dans la formation pédagogique des professeurs de langues, et qu'il faut prendre en considération sa nature complexe et orientée vers le processus dans la conception de cette formation.

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Introduction

This study looks at aspects of the knowledge base that experienced ESL teachers draw on in their work. We will analyze interviews with teachers and examine classroom data comprising explanations given by these teachers in the course of their day-to-day teaching in classes labelled 'Grammar.' Our principal research question is, 'What kinds of knowledge do practising teachers actually possess and utilize in their teaching?' Yet this question also leads to broader questions of central relevance to the design of language teacher education programs, such as the following:

- How can this knowledge be integrated into the curriculum of language teacher education programs?
- How can research of this kind be useful in critically examining the presuppositions and beliefs that underlie the content and structure of language teacher curricula as they are constructed at present?

Teacher knowledge, applied linguistics, and language teacher education

The original motivation for conducting the study described here, and its purpose, lie in the realm of language teacher education curriculum design. The first author was recently engaged in revising the curriculum for the master's program at his institution; part of this endeavour involved the design of a new course in linguistic analysis for ESL teachers, in which the focus was the kind of knowledge of language that is of direct relevance to language teachers – as opposed to the courses that were at that time required, which tended to centre around the kinds of knowledge typically dealt with in linguistics.[2] During a meeting of the Graduate Faculty of the MA in ESL Program in which the new course was being discussed, a linguist member of the faculty asked what *evidence* there was that the more pedagogical focus of the new course was indeed what language teachers want and need. Though the first author has considerable experience teaching linguistics courses to language teachers (and teaching ESL/EFL) and could draw on a great deal of anecdotal support, he was forced to confess that there is little research evidence of this need. This study, then, addresses precisely the question of what kinds of knowledge are most useful to teachers.

For the rest of this introduction, we will attempt to delineate exactly what our focus is, in order to set the present study in its context. We

will locate this work at the intersection of three overlapping areas: teacher knowledge, applied linguistics, and language teacher education curriculum design.

Teacher knowledge in language teaching

Later in this section we will explore the notion of teacher knowledge as it is understood in the field of education, as well as how this conception is making its way into language teaching. First, however, it is worth considering the status quo in much ESL teacher preparation.

A significant number of MA programs in the US and elsewhere arose within linguistics departments; they were staffed by professors qualified in linguistics, and above all held as an article of faith that what language teachers need most is training in linguistics. Today, most ESL professionals would agree that this is a fundamental misconception. However, this misconception has been so influential that it has taken decades to dismantle. A major part of research in language teaching and teacher learning over the last 15 or 20 years has involved the rediscovery of the basic truth that in language teaching, it is the teaching that is most important, not the language: that language teaching is first and foremost an educational enterprise, not a linguistic one. With sometimes agonizing slowness, the field of language pedagogy has finally come to understand that teachers need to know about motivation, interpersonal relations, classroom management, evaluation, and a host of other topics traditionally found in teacher education programs, but often not in applied linguistics programs.

In our view, although this slow-motion epiphany is greatly desirable, it has come at a price: along the way, we have to a significant extent lost sight of the fact that teachers still need to know about language in order to teach it. The exact nature of the knowledge may be different, but it's still needed. In our quest for reflection, for whole language, for critical pedagogy and student-centred learning, we still need to know, for example, about parts of speech, the subcategorization of verbs, phonological rules, and the semantics of tense. One of our aims in this paper is to remind ourselves and our readers of this fact.

At the same time, there has been a great deal of interest in the field of general education in the nature of teacher knowledge. Perhaps the most influential theoretical framework to emerge from this work has been Shulman's (e.g., 1987) model, in which teacher knowledge is seen to constitute an interrelated set of 'categories of knowledge':

- content knowledge
- general pedagogical knowledge (pedagogical issues that 'transcend subject matter')
- curriculum knowledge
- pedagogical content knowledge (the 'special amalgam of content and pedagogy that is uniquely the province of teachers')
- knowledge of learners and their characteristics
- knowledge of educational contexts (at both micro- and macro-levels)
- knowledge of educational ends, purposes, and values (adapted from Shulman, 1987, p. 8)

This framework allows us to see how the linguistic knowledge referred to above relates to the broader knowledge base of the teacher. Knowledge about language can be conceptualized as content knowledge (setting aside for the moment the important distinction between declarative and procedural knowledge, as well as the thorny issue of the appropriateness of metalanguage). The 'application' of knowledge about language – for example, how to explain grammar points to students – can, broadly, be seen as pedagogical content knowledge. This interpretation acknowledges the importance of linguistic knowledge without making it the central feature of teacher knowledge.

The literature on the issue of knowledge of language in language teaching remains somewhat paradoxical. There is no shortage of theoretical writings debating the question of whether grammar instruction is needed and of how to organize such instruction if it is (see Eisenstein-Ebsworth & Schweers, 1997, for a good review of these); there is also a growing number of experimental studies looking at how best to promote the acquisition of grammatical accuracy (see, e.g., Ellis, 1990). Yet very few studies acknowledge the realities of language teaching and look at what practising teachers actually teach in the way of grammar.

We wish to set the present study in the context of Freeman and Johnson's (1998) call for a reconceptualization of the knowledge base of language teaching. Freeman and Johnson militate for a rethinking of language teacher education in which the practice of teaching is central: 'We argue that the core of the new knowledge-base must focus on the activity of teaching itself; it should center on the teacher who does it, the contexts in which it is done, and pedagogy by which it is done' (p. 397).

Though such an approach may not at first glance seem radical, it flies in the face of the experimental and theoretical studies mentioned

above, which, as Freeman and Johnson point out, are seen at present as constituting the knowledge base of language teaching. To have a knowledge base that draws primarily on accounts of actual practice is indeed a new idea in language teaching.

Although, as we have mentioned, there is not a great deal of literature of this type at present, a body of work is starting to emerge that fleshes out Freeman and Johnson's position. Woods (1996) conducted a rich and complex study of teacher thinking with a group of eight ESL teachers in Canada as they planned and executed a variety of courses. Amongst other issues, he examined the beliefs, assumptions, and knowledge (BAK) of the teachers; he found that BAK 'seemed to underlie everything that the teachers did and said' (p. 282), colouring, for instance, their perceptions of curriculum as well as influencing their planning of individual units. From our point of view, it is significant that teacher knowledge is not seen in isolation but is inextricably bound up with the more evaluative categories of beliefs and assumptions; the evaluative component, in turn, reminds us that teacher knowledge is not merely instrumental or narrowly restricted to language education, but includes issues and perspectives, including cultural, political, and moral beliefs (Johnston, Juhász, Marken, & Ruiz, 1998). Lastly, it is worth noting that Woods emphasizes 'the extreme tentativeness of the decision-making process' (p. 278), with teachers' decisions nearly always contingent on emerging information.

Eisenstein-Ebsworth and Schweers (1997) conducted a questionnaire survey asking 30 ESL teachers in New York City and another 30 in Puerto Rico about their attitudes towards grammar teaching and their practices. Among numerous interesting findings, Eisenstein-Ebsworth and Schweers found that all of the Puerto Rican teachers and two-thirds of the New York teachers believed in some form of grammar teaching; that the exact nature of this teaching varied considerably from teacher to teacher; and that, strangely enough, 'our participants rarely justified their approaches by referring to research studies or any particular methodology' (p. 255), even though 'most teachers thoughtfully reflected on what they believed was effective for their students and seemed to be making principled choices' (p. 255). This very lack of reference to the 'traditional' knowledge base of language teaching lends powerful support to Freeman and Johnson's position that teacher knowledge can and should be rooted in teachers' actual practice.

Finally, Borg (1998) offers a detailed case study of a single teacher in a Maltese EFL classroom. Though the class itself is not exclusively grammar-focused, Borg concentrates on grammar teaching; like us, he is interested in looking at 'practicing teachers' understandings of

grammar teaching' (p. 32). His approach is to analyze the 'pedagogical system' of the teacher he studied. This pedagogical system includes a belief in the importance of work on grammar both in terms of awareness-raising and in terms of applying grammatical rules; the need to relate grammar work to the state of knowledge and the needs of the actual students in the class; and the need to engage the students actively in their own learning. These beliefs emerge not only from interviews with the teacher but also from an analysis of his classroom practice. Finally, Borg comments on the importance of training and experience in the development of the teacher's pedagogical system.

Applied linguistics revisited

Another useful way of thinking about teacher knowledge is via the notion of applied linguistics. In the 1960s, the idea of applied linguistics was very simple: one took linguistic knowledge and applied it in the language classroom. This 'applied science' model (Wallace, 1991) still underlies a lot of thinking both in language teaching and in other professional fields (engineering and medicine come to mind). However, in the social sciences in particular, an awareness of the complexity of social and cognitive processes has led to an appreciation of the difficulty (not to say impossibility) of directly applying findings from one field (linguistics) to practice in another field (language teaching). In a paper entitled 'Apply with caution,' Hatch (1978) warned against the temptation to draw simplistic pedagogical conclusions from research in second language acquisition; her warning reflected a general heightened sense of caution in this domain.

In recent years, the face of applied linguistics has changed. Its scope has broadened to include such areas as language planning, language and politics, and the use of language in law, alongside the 'traditional' arena of language teaching. On the way, various attempts have been made to define what 'applied linguistics' and 'applying linguistics' might mean for language teachers (e.g., Edge, 1988a; Reagan, 1997).

In our view, however, the basic issue remains unresolved. We see this basic issue as follows:

1. Amongst all the other skills and knowledge that language teachers need to have, they need to know about language.
2. In the most general sense, they need to be able to 'apply' what they know, in, for example, giving grammar explanations or helping a second language learner to pronounce the target language more effectively and to sound polite in the target language.

3. This application is different from other applications of knowledge about language, since it draws on a skilful combination of language and pedagogy (Shulman's [1987] *pedagogical content knowledge*).
4. The acquisition of this knowledge about language *still* needs to be incorporated into programs of teacher education.

This brings us to the final area we wish to consider, that of curriculum design.

Language teacher education curriculum design

There is little or no theory of language teacher education curriculum design. The only extended direct treatment that we are aware of is by Roberts (1998), but unfortunately he does not offer great insight, preferring to survey philosophical positions such as positivism and phenomenology in relation to the language teacher education curriculum. While the philosophical underpinnings of such curricula are clearly important, there is also a more pressing need to revisit our practices in teacher education, to analyze these practices critically, and to devise ways of enhancing what we already do.

It seems to us that theory and practice in language teacher education need to address *at least* the following issues in designing and revising programs:

1. the content of language teacher education (including the status of knowledge about language);
2. the forms and structures most likely to allow student teachers to make best use of this content;
3. the sequencing of content and form that is most conducive to effective learning; and
4. the articulation between teacher education and actual teaching.

Rather than discussing the whole question of curriculum design here, however, let us state how our present concern relates to it. Our basic point is this: there are certain forms of teacher knowledge possessed by experienced practising teachers in the field, and language teacher education would do very well to incorporate these into its curricula. The present study focuses on the knowledge itself, and so the next step, its incorporation into the curriculum, is speculative. However, it is also a pressing practical need in the MA program described in our opening paragraphs (and, we suspect, in numerous other programs), so after we have described and discussed our study and its findings

we will take the liberty of reflecting on their potential significance for curriculum design.

The study

Informants and setting

Four experienced ESL grammar teachers in a mid-western US university Intensive English Program (IEP) agreed to participate in this study: Jane, Kathryn, Lily, and Marie (these are pseudonyms chosen by the teachers themselves). These informants were selected to represent a range of backgrounds and of current course levels. The informants each had several years' experience teaching English to non-native speakers of various ages in the US and abroad, including prior experience teaching grammar at different levels. All were widely acknowledged to be excellent teachers.

The IEP in which the informants work has 10-week grammar classes at five different levels. In the term in which data were collected, Marie was teaching Level 2 (intermediate), Kathryn and Lily taught Level 4 (advanced), and Jane taught Level 5 (also advanced, though with a focus on written rather than oral skills). Classes were typical for this IEP in both size and composition: approximately 10–15 students each with a range of linguistic and cultural backgrounds, though with a predominance of Asian and Arabic-speaking students. Grammar classes are an integral component of a set of courses required for each of the five levels in the IEP.

Data collection

Data for this study come from two sources: transcriptions of passages from the teachers' classes containing grammar explanations[3] and follow-up interviews with the teachers.

Two classes taught by each of the four teachers were observed and simultaneously audio-taped. Class length ranged from 50 to 90 minutes. Passages involving grammatical explanations were selected from every lesson and were transcribed. These transcriptions formed the first set of data for this study.

Shortly following the observations, the teachers were provided with a copy of the transcriptions from their classes (around 4–5 pages for each teacher) and a list of preliminary interview questions (see Appendix A). The teachers were then interviewed individually for approximately 45 minutes each and were asked to reflect on the

specific explanations observed in their classes as well as on their general approach to explanations of grammatical and other linguistic issues. These interviews were then transcribed in full. The transcriptions formed the second set of data.

Data analysis

The transcriptions of the lesson extracts and the interviews were subjected to a content analysis in which they were coded according to three of the categories of teacher knowledge described by Shulman: content knowledge, pedagogical content knowledge, and knowledge of learners. (Given the focus of the study – explanations of grammar and other language points – it was obvious that the first two categories were of most relevance; during the interviews, as we shall explain below, it became clear that the third was also highly important.)

Coding was conducted separately by each of the two co-authors; the two codings were substantially similar, though minor differences were noted and subsequently examined separately (see below). Each category was then further analyzed to identify significant themes. The results of this analysis are given below.

Findings

In this section, we will examine aspects of the teachers' knowledge base as revealed in the interviews and lesson transcripts, focusing in turn on each of three categories of teacher knowledge from Shulman's framework:

1. *Content knowledge.* In this section, drawing primarily on the interview data, we look at the sources of teachers' knowledge of English grammar.
2. *Pedagogical content knowledge.* The aspect of this knowledge that we will concentrate on is that of explanations of grammar points, while acknowledging that this is only a tiny fragment of the entire pedagogical content knowledge that teachers draw on.
3. *Knowledge of learners.* In this section we are concerned with the teachers' constructions of student knowledge and student learning: that is, what students 'know' about grammar and how they learn.

In a fourth and final section, partially drawing on passages whose coding was ambiguous (see above), we will examine how the various categories interact in actual teaching.

Content knowledge: Sources of teacher knowledge

Content knowledge is the knowledge teachers have of the subject matter. It must be acknowledged here that the nature of the 'subject matter' of language teaching is in fact an open question. Even in subjects such as physics or history, there is debate over what the 'content' of the discipline might be; clearly, then, in a skill-focused field such as language learning, it is even harder to picture the 'body of knowledge' that might constitute the field. Do we mean procedural knowledge – the teacher's ability to speak the language – or declarative knowledge – the teacher's knowledge *about* the language, for example, the ability to articulate the rules of the language?

For the purposes of this study, we have chosen the second option, while acknowledging a strong argument for the first. It can be argued that articulating rules is no indication that one 'knows' the language in any useful or meaningful sense, and that this is little more than a persistent vestige of grammar-translation teaching. At one level, we agree that this is the case.

At another level, however, we suggest that the conscious awareness of grammar structures is as much a part of the teacher's knowledge base as the ability to use them in practice. The latter is a characteristic of all native speakers, and, as most ESL/EFL professionals would agree, being a native speaker does not in itself make one a good teacher (Edge, 1988b; Medgyes, 1994). It is also the case that knowledge of content does not translate automatically into pedagogical content knowledge – that the teacher knowing the rules is one thing, while what she does with that knowledge ('telling' it to the students, or finding other ways to work with it) is something else. Finally, whatever one thinks of classes labelled 'Grammar,' the fact is that they are at present an integral component of many adult teaching programs in the US and elsewhere; for this reason alone, it seems reasonable to see the teacher's knowledge of grammar rules as forming part of the knowledge base teachers in such programs need.[4]

Our concern in this section was with the *sources* of teachers' knowledge of grammar rules and knowledge about the structure of the English language. This information is of particular relevance in considering the role of language teacher education programs in teachers' acquisition of the knowledge base.

Perhaps not surprisingly, like the teacher in Borg's (1998) study, the teachers we spoke to mentioned their education and their experience as the two factors that played the biggest role in contributing to their content knowledge. The teachers' own education, ranging from middle

and high school grammar classes to graduate course work in linguistics courses focusing on the structure of English, were consistently mentioned as valuable sources of knowledge. Jane explains: 'We ourselves have to take Transformational Grammar and we have to take Grammar Analysis and we have to take all these different classes that tell us. It's like we're taking grammar classes as ESL students.' Marie recalls her experiences in grade school in some detail:

> It was probably my English course. I remember diagramming sentences and I loved that. I know that I still use the same symbols: parentheses around prepositional phrases, single underline subject, double underline verbs. And I still use the same approach or technique or whatever when I teach. So yeah, I guess I draw from my own grammar lessons as a student.

It is worth adding that more than one teacher commented on how much she enjoyed language analysis of this kind: Marie, for instance, describes it as 'fun' and states, 'I like grammar,' though she also wonders whether her memory for grammar facts from school is 'weird.'

It is noteworthy that, in different ways, all four teachers talked about their knowledge of English grammar as something that is continually growing and even changing. Besides reflecting on hours spent in the classroom as both teacher and student, the four consistently articulated various, sometimes less obvious, sources of knowledge. These can be roughly separated into three categories: building a 'database' of knowledge, working through the process of knowledge, and drawing on outside resources. The first two can be described as internal sources and the last as external.

Each teacher described her own mental processes of storing, sorting, and accessing bits of knowledge. Lily mentions her practice of creating an actual database comprising teaching ideas gleaned from Internet discussion groups and Web sites. But more interesting is her observation that, when confronted with a problem question, her first response is to 'kind of sort through my mental databases of sentences that I can use.' She explains: 'I have these little things kind of stored away in my mind, I guess, that I pull out when I need them.' Marie speaks of having 'that kind of brain, maybe, that remembers odd little rules.' Her concept of her source of knowledge is that, as she puts it, 'it's mostly just in my head.' Finally, Jane mentions having mentally stored important resources from her past courses for use in future examples: 'I remember all the readings and I remember examples of things. I remember examples of paragraphs where there was an excessive use of participial modifiers.'

The computational imagery of 'databases' and 'storing information' arises in the teachers' own descriptions. Yet there was also a powerful thrust in the data towards a more complex, holistic, and process-oriented view of teachers' knowledge, something we suggest is rooted in narrative forms of knowing (Bruner, 1985; Connelly & Clandinin, 1990).[5] For example, in discussing her advanced grammar class, Kathryn talks about knowledge not as a file that can be retrieved immediately but, rather, as a process that involves problem-solving strategies. Like the other teachers, she views the problems as fun and challenging: 'I think I look at it more like working puzzles. That's fun ... It's kind of like working out little problems all the time.' She talks about the need for testing rules and structures in a practical manner: 'You know, when you're looking at rules, you test rules to see if they'll work. I don't think I read that anywhere, but I know that it works. I mean, you can test it. It seems to me that you can test it.' This process-oriented approach to content knowledge allows Kathryn to feel confident in drawing on her own ideas of what makes sense, even if she is not sure where they are documented. In the following passage from her class, Kathryn deals with the question of whether 'wipe away' is a phrasal verb or a verb plus preposition by talking the class through the process of testing used to determine which combinations are phrasal verbs:

> Hmm. Well, let's test it. Can you say 'wipe off'? Can you just say 'wipe the fingerprints'? 'I need to wipe the glass.' 'There are fingerprints on that glass. I need to wipe it.' [...] You can say 'wipe away' but again, let's kind of practice, we're testing it to see now if most of the meaning is in the verb 'wipe.' Is the 'away' necessary? Does it necessarily tell us any information? Or is that information contained in the verb? [...] The verb is to do this [acting out]. So if you say 'wipe up,' 'wipe away,' 'wipe off.' There's some information contained in that, but I'm not sure it's another way to say, you know, wipe means wipe. [...] With most phrasal verbs, um, when you look at the verb and the particle, the meaning is not the combination of the two. In this case, it's really a combination of the two. Isn't it? [...] Yeah. I wouldn't put that one on the list.

Lastly, these teachers also rely on a variety of external sources of knowledge, including textbooks and reference grammars, other teachers and native speakers, and computer discussion lists. All four of the teachers mentioned using the textbooks assigned to their courses as references, but only one consistently refers to other grammar reference books. Kathryn, motivated by her own curiosity to 'know more about

"should"' during a unit on modals as well as by her desire to answer her students' questions, describes the following research steps she would take: 'I go to all my grammar books that I've accumulated. I look through those and see what I can find. I go through the grammar books used to teach students and see what's there. From there, it's a matter of asking other people, "What do you say and why is that wrong?"' Kathryn also mentions calling on native speakers for a second opinion: 'That's what we do, isn't it? When you can't find something, you have to try to talk to the native speakers and figure out by process of deduction, I think, why it doesn't work. Why does this bother me?' Similarly, Lily talks about finding many different teaching ideas on a computer discussion list: 'As you read different people's explanations, you realize which ones fit, which ones work, which ones can be useful and start mentally filing them away just like anything you might find.' In both cases, these teachers are making conscious efforts to build on their existing knowledge base.

Finally, an interesting issue that arose in at least two of the interviews was that the teachers do not regard possession of this knowledge as anything special. When asked about the sources of her extensive knowledge, Marie says, 'I never really thought about it.' Jane goes even further in response to the same question, saying, 'Doesn't everybody know this?' This seems to be the flip side of the native speaker fallacy (Phillipson, 1992) – that native speakers make the best teachers, but at the same time the 'knowledge' they possess is shared by every other native speaker; that is, no other specialist knowledge is required. Such attitudes may be indicative of a deeper problem in ESL teaching concerning professional self-image and self-worth, a problem we will not address further here but which impinges on the status of ESL (perhaps even more than other forms of language teaching) as a profession (Johnston, 1997).

Pedagogical content knowledge: Types of grammar explanation

The primary focus of this paper is the way experienced teachers give explanations of grammar points in class. It seems to us that this is pedagogical content knowledge par excellence – the 'special amalgam of content and pedagogy' that Shulman speaks of, in which the content knowledge discussed in the preceding section finds its pedagogical realization. While grammar explanations are, of course, only a small part of pedagogical content knowledge as a whole, they represent a clear example of what it means to 'apply' knowledge of language in whatever way.

In this section we will look both at how teachers talk in general about explanations and at some examples of actual explanations from classes taught by these teachers. We will first discuss the teachers' perceptions of what makes a good explanation, including such aspects as examples, rules, student input, metalanguage, questions, and explanation techniques. We will then look at how the teachers evaluate the success of these explanations, focusing on the issue of student feedback in its various forms.

Given the ongoing theoretical debate in language learning over the usefulness of rules, it is interesting to see how the teachers view their role in grammar teaching, specifically in the context of explanations. For example, Jane says she generally follows an inductive approach and gives more responsibility to her students by asking them to give the rules of a grammar point; she even says that 'I don't think you always have to give the student the rule. I'd rather give the student several examples and then just say, "Let's talk about them. What do you think? Why do you think I'm using this?" Or, you see a pattern.'

In general, then, though rules are not rejected by any of the teachers, none uses them exclusively or even primarily in her explanations. Instead, other features, especially examples, play a central role.

All four teachers said that examples are a key part of good explanations, though different accounts of the frequency and exact nature of examples were given. Marie feels it is always necessary to provide examples in a lower-level class. Kathryn believes that examples with context are more useful than other types of explanations, while Jane relies on giving examples and having students look for patterns if a particular rule is not handy.

Lily's use of examples was particularly interesting. She elicited examples from the students themselves, framing them before and after with her own brief explanation, as in the following passage in which students consider the meaning and structural formation of sentences with 'neglect':

> Lily: 'Neglect' was one of the other problems. What does 'neglect' mean? 'Neglect.' I'm planning a trip to your country. Did I neglect not to get a visa or did I neglect to get a visa so now I must postpone my trip? [...] I neglected not to get?
> S1: Yeah.
> Lily: Then I can go. [...] Because 'neglect' already has a negative meaning inside it –
> S2: Yeah.

Lily: – and if you know about English if you have two 'nots' they cancel it out, meaning I got my visa. So if we really want to say I had problems, I had trouble: I neglected to get my visa. I neglected to get my visa. So, tell me what did you neglect to do?
S3: I neglected to do homework.
Lily: OK. Neglected to do homework. Terrible student. S4, what did you neglect to do?
[silence]
Lily: What did you neglect to do? It's kind of like 'forget,' it's kind of like 'not remember to do.' So what did you neglect to do?
S4: I neglected to not to forget about my appointment.
Lily: So you remembered your appointment? OK, don't use 'neglect not to' because that's usually too confusing. We'd say, 'I did it,' 'I remembered my appointment.' S5, what did you neglect to do?
S5: I neglect to go out last night.
Lily: I neglected to go out last night. Do you usually go out?
S5: Yes.
[Four more students are asked and give answers]
Lily: Anyway, try to keep these in mind. [...] 'Neglect' usually has an affirmative infinitive after it: neglected to get, neglected to do, neglected to write, neglected to write my mother and now she's angry at me. That sort of thing.

In the interview, Lily explained her rationale for this technique:

> I try to give some examples from things that they're thinking of and what they do. I could probably have done more as far as explaining 'neglect,' that in addition to something you didn't do, it's also something you're expected to do, part of your duty and responsibility [...] I like to get them to try to think about it, just to see what they're coming up with. It's at least as valuable as my trying to come up with something, because we're all kind of thinking about different things.

In fact, in different ways, all the teachers emphasized the importance of student input in facilitating their explanations. Along with providing examples (as in the preceding extract from Lily's class), this input may take such forms as students searching for content materials and learning to analyze language on their own. Kathryn has her students locate their own examples from real contexts, for example, by going on a 'phrasal verbs hunt' in outside sources such as magazines and, in small groups, trying to identify which ones are actually phrasal verbs. Marie also believes in having her students analyze the language: 'I

think they need to be able to pick apart a sentence that they've produced.'

The teachers' opinions on the appropriate degree of metalanguage use varied, primarily depending on the different levels of courses they were teaching. For example, Marie feels that some basic metalanguage is important for her students at the lower level: 'They can't ask me a question if they don't know what to call it.' Similarly, Lily believes that metalanguage is useful at almost any level, but that the degree to which it should be used varies. Jane and Kathryn show the least concern for metalanguage. Jane says that it is useful only to a point: 'I don't think it's totally crucial to know absolutely all the jargon. To a certain extent, they already do.' Kathryn agrees that her students often come with a significant background in grammar and 'quite a lot of knowledge about the rules.' While her students may be comfortable talking about grammar, 'what they're not comfortable with is the more kind of contextualized language use that we expect. That's where they start to feel more uncomfortable.'

Immediate student engagement in the explanations is often achieved by a question-and-answer session led by the teacher. An example comes from one of Jane's classes. Here, the sentence 'Employees in the company won't understand everyone's being punished' is under discussion:

> S1: Can we change 'everyone' to be 'his'?
> Jane: Can we change 'everyone' to 'his'? 'Employees in the company won't understand his being punished.' What happens? Is it grammatically correct? S2.
> S2: It changes the meaning.
> Jane: It changes the meaning. In this case, who is being punished?
> S3: Everyone.
> Jane: Everybody. In this case, who's being punished? Only one person, and it's a male person. Now we've got: Employees in the company won't understand their being punished. Is that OK?
> S4: I think in that case 'their' means employees.
> Jane: Right, this only refers to the employees, while 'everyone' might just refer to the employees, but this is more vague. Who's 'they'? We don't know who 'they' are.

In fact, all four teachers encouraged questions from students and devoted considerable stretches of their lessons to student-initiated discussions. In referring to this technique and more generally to the

desirability of active student involvement in the process of understanding, Kathryn says, 'I think I listen and ask questions and ask if other people have questions. A lot of times, it seems like other students will ask the questions I want to ask before I do if I wait ... Their eyes pop up. And generally, you can see when they kind of know. And so I like the students to bring it up first if possible.'

Lastly, two features of the process of giving explanations should be commented on, particularly in light of our concern with language teacher education. First, the teachers described how difficult it sometimes is to give good examples of points being made. Marie, for instance, admits that 'it's hard to come up with examples in front of a class of students who are looking at you, waiting.' The ability to produce such examples is clearly something that gets easier with time, when teachers have been able to amass a number of these from previous experience. However, it does seem worth suggesting that this is the kind of skill (and professional habit) that could begin to be developed in teacher education.

The same is true of another phenomenon we observed in many of the classes. In classes like these, where a dialogical approach is taken and student contributions are welcomed and often actively encouraged, a significant part of the teacher's job consists of on-the-spot adjudication of sample sentences the students throw out. This adjudication involves not just ruling whether a sentence is acceptable or not (itself often a very difficult task), but also what exactly may be wrong with it, or how it may have a grammatical meaning different from that intended by the student while still being formally native-like (as we saw in the extract from Jane's class). This process, too, is something that can begin to be addressed in teacher education.

In addition to considering what makes a good explanation, teachers were asked how they determine whether or not an explanation was successful. This proved to be a complex issue – what Lily described as 'a real teacher intuitive area' that is acquired with experience over time. The teacher responses focused primarily on feedback they receive from the students. This feedback can be non-verbal, written, or spoken and can occur at various times.

All four teachers mentioned the need to pay attention to signals given by students in their body language, especially eye contact and facial expressions. Marie talks about occasions when 'it's very obvious when they don't get it. I mean, their head is in both hands and they're scowling and they're shaking their head, so I try to pick up on that.' Jane points out that explanations are not always successful, but she

knows it's clear when she sees that for some students, 'it's clicking.' Kathryn reminds us that teachers can't jump to conclusions with non-verbal messages: 'Sometimes looking confused can mean processing, too. Give the explanation and example and wait a little bit ... let it sink in a little bit and then check.'

In addition to monitoring non-verbal messages from their students, these teachers also rely on immediate comprehension checks to determine the degree to which a given explanation was successful. Jane believes in pushing her students to demonstrate their understanding by asking them, '"Are you sure you understand?" and if they say yes, then ... depending on what it is, you could write a sentence and ask them a question about it or write two sentences and have them combine it or write one sentence and say, "Break it up into three ideas for me."' Lily likewise talks about judging her students' understanding by their ability to come up with examples. Similarly, Marie describes a sequence of steps involving both understanding and production:

> I ask if they have any questions and I try to wait long enough so that they can formulate a question if they have one. Then, I guess, finding out if they can answer questions that I ask them about what I've just said. And then, can they apply it. Can they produce a sentence or an example? And I guess maybe even before producing would be being able to identify it if I gave a sample sentence.

Kathryn's suggestion, cited above, of allowing students to process the information they've been given illustrates an important point about the evaluation of explanations: the fact that feedback can be observed or measured at different stages of the learning process. As she puts it, 'there's immediate feedback and later information too, of course. What happens now is one thing and then whether they really get it or not shows up later.' While the four teachers first mentioned immediate feedback clues from their students as described above, they also acknowledged the need for delayed feedback and stressed the importance of providing alternative outlets for their students. In their classes, students have the opportunity to express individual concerns about certain points by writing questions in their grammar journals (in Marie and Kathryn's classes) or by asking questions after class or during teachers' office hours. Kathryn emphasizes the importance of 'providing some other way for students to ask questions or show you that they don't understand, other than just asking you in class. Others communicate these questions much more frequently in writing.'

Knowledge of learners: Teachers' constructions of student knowledge and student learning

As we stated in the previous section, our main aim in this study was to examine teachers' grammatical explanations. As we first looked over the interviews, however, we noticed that the teachers had particular ways of talking about what students knew and how they learned. We realized, further, that these assumptions about student knowledge and student learning were crucially related to pedagogical content knowledge: put simply, teachers' beliefs about how learners learn and what they know affect their pedagogical strategies. In this section, we will analyze how teachers talk about student learning and what assumptions might underlie the ideas they express.

Let us begin with an extract from Jane's interview in which many of the issues we will examine here are raised. Jane is talking about the fact that her grammar class, the highest-level class of its kind in the program, is seen mostly as a review:

> So I sort of assume that they know a certain level of all this, but maybe have either forgotten or never understood it when they first learned it. They maybe just memorized the rules and studied for the test and took the test. [...] To a certain level they did know a lot of it. They just maybe never understood why there was a possessive gerund or why it was like this. I think that was probably in most of their cases, that they had seen it but maybe never really knew how that particular structure is put together.

In this extract, Jane analyzes different aspects of what it is to 'know' the grammar or parts of it. She expresses the view that there is a difference between knowing a rule for the purposes of a test and actually understanding it. And she implies that there is also a gap between knowing some grammar point receptively and actually being able to use it in production. In the rest of this section we will examine the oppositions Jane talks about and how they relate to the construction of student knowledge and student learning that emerges from the four interviews.

In the way all four teachers talked about student knowledge, it is clear that *understanding* plays a crucial role. The clearest example of this is in the description of a 'lightbulb effect' (contrasting with the 'scowls' mentioned earlier), for example, in the following passage, in which Marie is talking about a student responding to an explanation:

> With him, even though he's low and may not be passing the class, you can tell when he's really thinking about something. His face is very expressive and he'll kind of look away and he's thinking and then when he gets it, sometimes out in class, he'll just suddenly go, 'Ohhh!'

All four teachers spoke of students 'getting it,' 'understanding,' or 'seeing' a particular point. In her interview, for instance, Marie discusses a moment in class when a student produced the erroneous sentence 'I sit a chair' in a discussion of transitive verbs. Marie complains of herself: 'I couldn't get them to the point of seeing that the word 'in' changes everything and makes it clear that it's not a transitive verb because we can't ask, "What do the students sit?"' Learning, as it is conceived by the teachers, begins with the students grasping conceptually the form and especially the meaning of grammatical constructions. Jane says that in her high-level class a central question is: 'Do you understand this structure and how it's being used, why it's being used?' Kathryn echoes this: 'It's not so much how you do it, it's why you do it, I think, for students, when you're talking about grammar, at least at this level.'

Yet there is also an emphasis on *production* found in all the interviews (and, incidentally, also in the lesson transcripts): that is, a belief that student knowledge must include accurate production in terms of both form and meaning. In most cases, teachers spoke of such production as 'applying' or 'using' what the students 'know.' Lily talks of students who 'have a tremendous grammar background but can't use it.' Jane mentions the technique of taking sample sentences from students' essays 'to help them understand how to apply what we've already learned.'

The relationship between understanding and production, as constructed by the teachers, appears clearly in Jane's comment on the subject of rules:

> They oftentimes don't understand the rules. They just read a rule and go, 'OK, I've read this since I was eleven years old. I've read it a million times back in my country and here.' And they're still not using it right. They all know they need to use the third person singular 's' and half the class still doesn't use it. They don't apply it while they're writing.

There is no room here to analyze in detail the relationship between these views and current thinking in second language acquisition theory and research. We wish to note, however, that the two coincide on some but not all points and that this interface deserves considerably

more attention in the area of second language teacher education than it has hitherto received.

Jane's mention of rules in the extract quoted above indicates their importance in language teaching as practised by the four teachers in this study. Theorists and researchers continue to debate the usefulness of such rules in language teaching (VanPatten, 1988; Ellis, 1998), but their central place in real teaching in contexts such as the present program is undeniable. While, as mentioned earlier, none of the teachers expressed a belief in teachers presenting detailed rules and making students memorize them, all four referred to rules in the sense of 'descriptive generalizations about the form, meaning, and use of grammatical items' (Borg, 1998, p. 22). In discussing the 'I sit a chair' problem mentioned above, for instance, Marie says the following:

> Marie: I can see where they're coming from. I can see why they think 'chair' is a direct object in that sentence.
> Interviewer: Why do they think that?
> Marie: Well, it's a noun. They're probably running through all the rules and things I've given them. Direct objects are nouns, they come after action verbs.

Lily describes similar problems when she says that 'oftentimes, they will kind of parrot back things that were said when they find a situation that they think doesn't fit the example: "But you told us that, blah blah blah."' While the ability to state a rule was nowhere equated with the ability to use that rule, it is clear that the former ability features prominently in the teachers' construction of what the students know.

The use of rules leads us to another important observation. In many places, teachers speak of grammar knowledge as *content* – that is, as if it were declarative knowledge. Marie refers to 'information that I've already given them' about grammar. Kathryn speaks of 'the amount of knowledge that you know the students already have' and suggests that long explanations may overwhelm the students 'so then they don't remember anything.' Lily says of one issue that her students 'already knew a fair amount about the topic.' In all these examples, there is a clear image of the students' knowledge of grammar as a 'body of knowledge' – a set of facts to be known. In this context, the procedural aspect of knowledge – students' actual ability to speak the language – is somewhat lost.

Overall, however, two observations stand out. The first is that, whatever the theoretical literature claims to be true, it is a fact that for all four teachers, with these particular learners – educated adult

international students, predominantly from developing nations – a central role is played by conscious *awareness* and *analysis* of the language. Whether or not there is wholesale learning of rules, teachers (and, we would argue, learners too[6]) believe that a conscious conceptual grasp of the various points of grammar is necessary and beneficial. Kathryn, for instance, says that 'one of the things students at this level need to be aware of are the various levels of formality that we use in English'; she also describes how students bring into class counter-examples of the rules they have been given that they have found in dictionaries and other sources. As has been shown here, analysis and discussion of language form an essential part of the teaching strategies of all four teachers. Whether or not this can be read as a justification for rule-based learning, a structural syllabus, or separate classes devoted to grammar is another issue; the fact is that adult learners of this kind are highly conscious of the forms and meanings of the language they are learning.

The second overall point we wish to make is that the analytic distinctions we have drawn in this section between understanding, production, use of rules, and so on may mistakenly give the impression that the teachers' view of student knowledge and student learning is disjointed or fragmentary. This is not the case. The picture that arises from the interviews and lesson transcripts as a whole is that the teachers' constructions of student learning and student knowledge are complex, multifaceted, and integrated. They are also process-oriented: the attitude underlying Lily's approach, for example, is what she describes as 'Here's what you've studied, now we're going to work with it a little bit more.' In this ongoing work with students, teachers develop and continue to use an image of student learning that incorporates declarative and procedural knowledge, conscious and unconscious learning, and narrative and paradigmatic ways of knowing (Bruner, 1985). Their aim, in Lily's words, is to 'make connections' between these different kinds of knowledge, to allow one kind to build on another until the final goal of using the forms and meanings correctly and appropriately is achieved: as Lily says, 'I've read it, I've written it, I'm now speaking it.'

The complexity of teacher knowledge

Although the discrete categories in Shulman's framework of teacher knowledge are useful at a conceptual level and are convenient for analysis, in practice the various forms of teacher knowledge interact in complex ways as teachers go about their work in classrooms. In this

final section, we will show how the three categories above intersect in the ways the teachers talk about teaching grammar. In this section, we will in a sense be undoing the analytic work of coding we performed for this study and reassembling teacher knowledge in all its complexity to see how in practice the different forms of knowledge combine and work together. Although this phenomenon was ubiquitous in the interviews (and made the job of analysis particularly troublesome, creating some of the coding discrepancies referred to above), two examples will be sufficient to demonstrate how it works.

In the following extract, Jane is describing one way in which she used authentic materials in one of her classes:

> I just photocopied a whole page of *Newsweek* editorial letters because in every single letter, the very first line was a huge noun clause. Even the students were amazed: 'Oh my gosh. This how we use noun clauses.'[...] [E]very single letter had an extremely, extremely long noun clause. And then I'm saying, 'Now, what about this noun clause?' I asked them to look for the main verb. And of course it's way later and there's like ten or fifteen words just in this one noun clause. And they all start out like: 'The contention that your ... really bothered me.' So you've got this little verb at the end. But we looked at all of those and I think that I just kind of asked them questions about, 'What does this person think?' And then they would kind of reword it: 'Well, this person thinks that they don't like that person's contention.' And what is the contention? The contention that this. You just kind of break it up. So you can take that whole sentence and, like, reduce it to six or seven different sentences. When they see it that way, they're like, 'Oh, that's so easy to understand.' But when they see it in that long form ... And then we look at, 'What's the purpose of using that?' Because it makes that person sound stronger. Because it makes that person get their point across. Or it makes that person sound angry or whatever.

In this extract, Jane draws virtually simultaneously on all the categories of teacher knowledge we have examined here. Her content knowledge is utilized both at the level of syntactic structure (her awareness of, and ability to identify to students, the noun phrases in question) and at the level of discourse and pragmatics – note how, at the end, she moves from a discussion of the formal properties of the sentences to their rhetorical force as she asks, 'What's the purpose of using that?' At the same time, her pedagogical content knowledge is enlisted in her decision to use this material as a consciousness-raising device, as well as in her choice of strategy: leading the students to

break down the complexity of the sentence into cognitively more manageable propositions until they are able to grasp the overall meaning. At the same time, as pointed out above, the link between pedagogical content knowledge and knowledge of students' learning is an integral part of the process. Her vocalization both of the students' initial surprise and bewilderment ('Oh my gosh') and of their moment of comprehension ('Oh, that's so easy to understand') is, and indeed must be, based on a firm understanding of the cognitive processes through which the students themselves are going. The passage as a whole weaves in and out of these categories of teacher knowledge to produce a seamless, coherent account of a pedagogical strategy and its results.

Furthermore, there is significance in the very fact that Jane's knowledge is realized in stories of actual teaching events, such as the one cited above. Bruner (1985) has suggested that there are two different kinds of knowledge, which he calls *narrative* and *paradigmatic* knowledge. Paradigmatic knowledge is knowledge in the form of generalizations: the kind of thing that one finds in grammar reference books and which, we suggest, instinctively comes to mind when one uses the phrase 'knowledge base.' Yet, as many researchers have argued (e.g., Carter, 1993; Connelly & Clandinin, 1990; Cortazzi, 1993; Gudmundsdottir, 1995; Moran, 1996), teacher knowledge is largely of the narrative kind: that is, knowledge that is 'built from personal and professional experience' (Cortazzi, 1993, p. 9). Cortazzi quotes Doyle (1990) as suggesting that what teachers know is 'tied to specific events they have experienced in classrooms' and that this knowledge is 'fundamentally particularistic and situational' (Doyle, 1990, pp. 355–356, cited in Cortazzi, 1993, p. 9). Jane's *Newsweek* story seems a classic example of this kind of narrative knowledge.

In the following example, Kathryn is explaining the thinking behind her work on phrasal verbs, which is spread throughout the 10-week term:

> They have a tendency to think that anything that looks like a preposition is a preposition and that it's too overwhelming for them to handle prepositions in general so we've found it somewhat comforting to students to separate out which are prepositions and which are particles attached to a verb, so that they can have some sense that there is some logic somewhere in this whole system. There's a comfort factor here for students. By the end of the term, they generally say they start to feel somewhat more confident that they can manage these words that they had a feeling they couldn't manage before. Because particles and prepo-

> sitions, all kinds of adverbials, all look the same to them. They don't know what to do with them. That's what I'm after in this.

Like Jane, Kathryn intertwines the different categories of knowledge so as to create a single story. Clearly, content knowledge enters into the picture in Kathryn's knowledge of the preposition/particle distinction and of the tests used to distinguish one from the other. What is most noteworthy here, however, is how Kathryn's pedagogical content knowledge and her construction of what students know are intricately melded in her thinking about syllabus design. Pedagogical decisions, such as the decision to include the preposition/particle distinction but to spread it out over the whole term, are an obvious example of pedagogical content knowledge. Yet, as Kathryn's frequent references to the students' perspective demonstrate, this pedagogical content knowledge is itself firmly rooted in an understanding of how the elements of English grammar – in this case, the surface similarity of verb-plus-particle and verb-plus-preposition combinations – are actually perceived by the students. Kathryn's description shows a fundamental grasp of the state of student knowledge, as part of a broader ability to see things from the student perspective ('particles and prepositions, all kinds of adverbials, all look the same to them'). This perspective, moreover, is not restricted to matters of grammar, but extends into other vital realms of knowledge about students, including their affective states, such as confidence and 'comfort.' Once again, in talking about actual contextualized teaching situations, an experienced teacher draws on all aspects of teacher knowledge in describing and evaluating the situation and determining how to act within it. And, once again, it can be argued that Kathryn's knowledge is rooted in 'particularistic and situational' experiences such as that described above.

Examples like these could be multiplied. However, we feel the basic point has been made – that while the 'categories' of teacher knowledge are a useful analytic concept, in reality these categories are melded together in complex and indeed inextricable ways to produce multifaceted, holistic accounts of, and actions in, language teaching.

The knowledge base of teaching and language teacher education

In this section we would like to revisit the issue that was the point of departure for this study: the content and form of language teacher education. What is the significance of the preceding analysis for

program design in teacher education? What implications does this study have for the *what* and the *how* of language teacher education? Although a number of points emerge from the analysis that may be of direct relevance to teacher educators, we wish to focus on two crucial issues: the process-oriented nature of the knowledge base and the interconnectedness of the various categories of knowledge.

A recurrent theme that has emerged in each of the sections above is the fact that the knowledge base of language teaching seems highly process-oriented. Perhaps this should not be surprising in a practice-based field like ESL; yet it runs counter to the usual image of a 'knowledge base' as a repository of inert facts, propositions, and so on. Rather than merely constituting such a 'resource' of facts about the English language, the knowledge base of these teachers frequently involves engaging in their analysis dialogically with students, helping them to go through the processes necessary for an understanding of the language. This is the case even with the facts of grammar themselves: As we saw, teachers like Kathryn treat knowledge of grammar not just as a set of facts but as a series of processes that can and should be applied in individual cases to figure out, for example, the grammatical status of a given verb-plus-preposition combination.

The message of this finding for teacher education is clear. While knowledge about language is obviously needed in language teacher education programs, it is just as obviously crucial to focus on knowledge as process as much as on the regurgitation of static facts. Where grammatical knowledge is 'covered,' it should be seen in terms of the gradual acquisition of understanding rather than in terms of the transfer of information. It is important to stress our point here. Some language teacher educators believe that ESL teachers 'don't need' certain detailed information about language. What we are saying is that they do need it, but it needs to be dealt with differently than has traditionally been the case. What is needed is not less, and also not more, but something different. We suggest that, in practical terms, what this means for language teacher education programs is an emphasis on processes in a whole range of areas from learning about the language itself (in the mode of discovery learning) to the formulation of rules for students, the production of examples, on-the-spot adjudication of students' own sentences, and so on.

An important aspect of the process-oriented nature of the teacher knowledge base is that it is grounded in narrative ways of knowing: that is, knowledge in the form of stories and specific, concrete professional experiences. We suggest that such knowledge is also undervalued in language teacher education, in favour of paradigmatic

ways of knowing (Bruner, 1985) such as generalizations about both language structure and good teaching practice. This tendency in fact works against effective teacher education, insofar as it misrepresents the best ways teachers have of learning to do their job well.

Our second point is that, as indicated in the last section of the analysis, the knowledge base of teaching is inherently complex and multifaceted, drawing on all the various components of the knowledge base at once. We strongly suspect that this would be the case whatever analytic framework one used for categorizing the different parts of the knowledge base. It was clear in the extracts cited above (and throughout our database) that teachers drew simultaneously on various combinations of the three categories of knowledge we have been looking at here (content knowledge, pedagogical content knowledge, and knowledge of learners) and also on other categories that we did not focus on, such as curriculum knowledge and knowledge of educational contexts.

Again, there is a clear message here for teacher education. Language teacher education programs, in the US at least, include (in whatever form) much of the knowledge referred to above. To simplify considerably, one might say that content knowledge is covered in classes on language structure, pedagogical content knowledge in methods courses, and knowledge of learners in courses on second language acquisition. Yet this very modularization of the knowledge base becomes problematic. As we have pointed out above, for us as researchers, Shulman's categories were an analytic convenience as we examined the complex reality of classrooms and the ways teachers talked about them. Yet in examining how teachers talk about their work, we found the various categories always used in complex combinations. This suggests strongly that the presentation of modularized pieces of information that must later be assembled and combined in practice may not be the most useful way of integrating the knowledge base into the teacher education curriculum.

We suggest, then, the need for a significantly more integrated approach to the language teacher curriculum, one in which the various components of the knowledge base are seen to relate to each other in ways that have a crucial bearing on the basic pedagogical question of what gets taught and how. Language teaching methods do not, or should not, exist in isolation from how language learners learn; this, in turn, should not be considered apart from the structure of the language that they are seeking to learn. Given the modularized, credit-based approach used in higher education here in the US and in many other countries, we acknowledge that such an integrated approach

may be hard to implement. However, we believe it is a important goal worth serious efforts.

Conclusions

In our introduction, we posed the following central question in our research: 'What kinds of knowledge do practising teachers actually possess and utilize in their teaching?' Our study suggests that the answer to this question is both complex and of central importance in language teaching and language teacher education. The study provides evidence for certain conclusions.

First, there is indeed a knowledge base of language teaching. It involves at least the three elements examined here – content knowledge, pedagogical content knowledge, and knowledge of learners – along with a great deal else. It is in fact the case that, for these teachers at least, knowledge of the grammar of English plays a crucial role in their teaching.

Second, as we argued in the section on teacher education, these various elements are intertwined in complex ways as the knowledge base is utilized in the classroom. Although knowledge of English is vital, it takes on real pedagogical significance only when it is combined with other kinds of teacher knowledge, such as knowledge of learners. This very combination is in fact another part of the knowledge base of the language teacher.

Third, rather than comprising a static body of knowledge, as the term 'knowledge base' might suggest, the knowledge base of language teachers might best be categorized as *process-oriented* in certain crucial ways. To begin with, it is rooted in an essentially *dialogical* approach to teaching (Johnston, 1998) in which there is an ongoing interaction between the teacher's knowledge and actions and her awareness of student knowledge and student learning. Furthermore, the knowledge base is process-oriented because its various components are themselves processes (student learning, pedagogical strategies) as much as supposedly static features (the grammar of English – which, of course, is also dynamic, as is teachers' ongoing learning about it). Last, the actions the knowledge base leads to are also processes: the giving of explanations, the creation of appropriate examples, and the use of resources and references take on life only in the process of actual teaching and learning with real students in a classroom.

Finally, the knowledge base itself and all its components should be central to any language teacher education program. Such programs should above all acknowledge the situated, process-oriented, contex-

tualized nature of the knowledge base, so that the boundary between what is thought of as theory (knowledge of language) and what is thought of as practice (teaching) finally begins to be erased.

This article raises many more questions than it answers. Above all, the study described here looks only at a small part of the knowledge base of language teachers, and does so only in a single context with a small group of informants. We heartily endorse Freeman and Johnson's (1998) call for more research into other aspects of the knowledge base. Nevertheless, we believe that we have succeeded not only in raising important issues, but in going some way towards determining what our answers might be and how we might go about making practical use of those answers. To conclude, we reiterate our call for the need to conduct research such as that described here, precisely in order to improve practice in language teacher education, especially in curriculum design for teacher education programs. It is here, more than anywhere else, that an enhanced awareness of the complexity and the process-oriented nature of the knowledge base of teachers should be most relevant and most influential.

Bill Johnston is Assistant Professor in the Program in TESOL and Applied Linguistics at Indiana University. His research interests include language teacher education and teacher development.

Karin Goettsch teaches in the Composition Program for Non-Native English Speakers at the University of Minnesota.

Notes

1 We would like to thank the four teachers for agreeing to take part in this study, and Elaine Tarone, Andrew Cohen, and two anonymous *CMLR* reviewers for helpful feedback on earlier versions of this paper.

2 Such a shift in emphasis was lent support by a recent external review of the program. For example, in a questionnaire that formed part of the self-study materials presented to the reviewers, one former student wrote the following in response to a question about areas of weakness in the program:

> Classes that were too purely linguistics oriented w/o applications to ESL. For example, in phonetics we were tested on how we could produce sounds made by some obscure Pacific island peoples instead of listening to a NNS attempt to produce English and analyze pronunciation difficulties. The latter challenge would have been relevant, the former had no value. I'm not Margaret Mead.

3 Our definition of 'explanation' was deliberately broad and included both prepared presentations of grammar points and impromptu responses to student questions. From the point of view of the study, however, the latter are clearly of greater interest, in that they show teachers doing what they do best – interacting with students in ways that are never fully predictable and, in the process, making use of the full range of the knowledge base that is of concern to us here.
4 In this regard, it is worth remembering that in the teaching of many other languages – for example, those with rich morpho-syntactic systems, such as the Slavic languages – grammar teaching plays an even more significant part in actual teaching.
5 We are grateful to one of *CMLR*'s anonymous reviewers for pointing out this metaphorical tension in the data.
6 The present study, of course, does not directly address learners' perceptions of grammar teaching. However, the popularity of grammar classes, and students' frequently expressed desire to study grammar, are widespread both in this context and elsewhere, and they should not be facilely dismissed.

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Appendix A

Interview Protocol

Please review the attached transcripts of explanations you gave in your class.

- Were you satisfied with these explanations? Which aspects of them were you satisfied with, and which might you change in retrospect?
- Why did you choose to say *x* rather than, for example, *y* or *z*? What factors influenced your choice?
- What knowledge did you draw on in giving this explanation? How did you know what to say?
- Where did this knowledge come from? From your graduate preparation? From experience? From other sources?
- How do you judge whether or not an explanation has been successful?
- In general, what makes a good explanation? How long should it be? How simple or complicated should it be?
- Do you think it's important for students to know metalanguage?
- Where does students' knowledge of the L2 come from?
- What advice would you give to an inexperienced teacher who says she is worried about how to give explanations of grammar and other language points when students ask questions in class?

N.B.: Informants were also asked about their own training and experience, in particular previous experience of teaching grammar classes in this IEP and elsewhere.