Studying teacher cognition in second language grammar teaching

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Abstract

Although formal instruction in second language (L2) teaching has been extensively researched in the last 20 years, this work tells us little about the actual processes of grammar teaching as these are perceived by teachers. At the same time, educational research has shown that much can be learned about the nature of instruction through the study of teacher cognition—the store of beliefs, knowledge, assumptions, theories, and attitudes about all aspects of their work which teachers hold and which have a powerful impact on teachers’ classroom practices. Studies of teacher cognition have also begun to appear in the field of L2 teaching in recent years, yet formal instruction, inexplicably, has received little attention. This paper makes a case for research on teacher cognition in grammar teaching. Such research, which focuses on understanding how teachers approach formal instruction, and why, can tell us much about the nature of grammar teaching as teachers perceive it, information which can be put to effective use in teacher education and development programmes. © 1999 Published by Elsevier Science Ltd. All rights reserved.

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1. Introduction

The impetus for this paper can be summarised in three observations about research on L2 teaching and teaching in general in the last 20 years:

1. Formal instruction has been one of the most researched aspects of L2 teaching. Yet not only has this research been largely inconclusive in identifying optimal
strategies for grammar learning, it has actually provided very little insight into the actual processes of L2 grammar teaching as these are perceived by teachers.

2. Educational research has acknowledged a conception of teachers as active, thinking, decision-makers whose instructional decisions are powerfully influenced by their cognitions about teaching and learning. Research on teaching has thus focused increasingly on describing what teachers actually do in classrooms and on understanding the cognitions which underlie these practices. This research has in turn been utilised by teacher educators to promote the development of reflective skills in teachers at both preservice and inservice levels.

3. Although teacher cognition research in the field of L2 teaching has increased in recent years, the teaching of grammar has attracted meagre attention. Thus we possess little descriptive data about L2 teachers’ practices in formal instruction and even less insight into the cognitions which underlie these practices. In the light of observations 1 and 2, this is clearly a gaping hole in the research agenda for L2 teaching.

My aim here is to make the case for the study of teacher cognition in L2 grammar teaching by expanding on each of these points with reference to the literature on both grammar teaching and teacher cognition. Findings from a recent project on teacher cognition in L2 grammar teaching are also presented to illustrate the potential such work has for expanding our current understandings of the processes of formal instruction.

2. L2 Grammar teaching

Grammar has been the focus of vast amounts of research on L2 acquisition (see Ellis, 1994, for review). An illustrative list of issues addressed by this work is presented in Table 1.

There are three points I want to make about this research:

1. Firstly, this work has been largely inconclusive (Ellis, 1998). Although it is now generally accepted that formal instruction does facilitate in some way the process of learning a L2 (Ellis, 1994), a reading of the sources listed in Table 1 shows that consensus about how best to teach grammar has not been achieved.

Table 1
Research on formal instruction

<table>
<thead>
<tr>
<th>Issues</th>
<th>Sources</th>
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<tr>
<td>Are inductive approaches to grammar better than deductive approaches?</td>
<td>Shaffer, 1989; DeKeyser, 1995</td>
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<tr>
<td>Should teachers correct students’ grammatical errors?</td>
<td>Chaudron, 1977; DeKeyser, 1993</td>
</tr>
<tr>
<td>Should teachers use grammatical terminology in class?</td>
<td>Berman, 1979; Garrett, 1986</td>
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For example, while Garrett argues against the use of grammatical terminology in L2 teaching, Berman outlines the value of doing so; and while K. Johnson argues that grammar practice activities enhance L2 acquisition, Ellis reviews research which does not support such an assertion. Thus, after over 20 years of research, “it is probably premature to reach any firm conclusions regarding what type of formal instruction works best” (Ellis, 1994, p. 646). In attempting to understand how teachers approach formal instruction, and why, then, we cannot even start with the assumption that their decisions are informed by a well-defined research base providing firm guidelines for practice.1

2. Secondly, much of this research has been experimental in nature. That is, to identify effective strategies for teaching grammar, researchers have set-up instructional contexts in which the effects on student achievement of different strategies can be compared (for two examples, see Fotos, 1993; DeKeyser, 1995). Such work tells us nothing about teachers’ decision-making processes in teaching grammar in natural settings. In fact, a criterion for judging the validity of much of this research has been the extent to which teachers’ ability to make decisions is curtailed (see, for example, Shaffer, 1989, p. 400, who outlined how she “minimized the teacher factor as much as possible”).

3. A substantial amount of descriptive research on grammar teaching in naturally-occurring settings has also been conducted (e.g. Faerch, 1985, 1986; Peck, 1988; Lightbown and Spada, 1990; Lyster and Ranta, 1997). Yet none of these studies have investigated the teacher cognitions underlying the practices described. Peck (1988) does claim to provide an emic (i.e. insider) perspective on teachers’ work, but what he actually provides is his own interpretation of how they approach grammar, “in terms they [teachers] do not habitually use” (p. 128).

What we have, then, is a large volume of research on formal instruction which paradoxically fails to contribute at all to an understanding of the process of grammar teaching as it is perceived by teachers.

3. Teacher cognition

For many years educational research was characterised by studies which explored effective teaching

by correlating particular processes, or teaching behaviors, with particular products, usually defined as student achievement as measured by standardized tests...

Underlying this view of research is a view of teaching as a primarily linear

1 The word start is important here, for even if a well-defined research base about effective grammar teaching did exist, studies of teacher cognition in other disciplines (e.g. Crawley and Slayer, 1995, in science education) suggest that teachers’ instructional decisions would not necessarily be influenced by this research.
activity wherein teaching behaviors are considered ‘causes’ and student learning is regarded as ‘effects’. This approach emphasizes the actions of teachers rather than their professional judgments and attempts to capture the activity of teaching by identifying sets of discrete behaviors reproducible from one teacher and one classroom to the next (Cochran-Smith and Lytle, 1990, p. 2).

This is, of course, the notion of teaching implicit in most research on formal instruction. The last 20 years, though, have seen the gradual emergence of an alternative conception of teaching as a process of active decision-making informed by teachers’ cognitions—the beliefs, knowledge, theories, assumptions, and attitudes about all aspects of their work which teachers have. This conception of teaching has been developed through an ever-growing body of research; as Table 2 illustrates, very selectively, teacher cognition has been studied in a range of diverse instructional settings—in both preservice and inservice contexts, at various levels (kindergarten, elementary, secondary, high school, college, and adult education), and with respect to a wide range of subjects (e.g. English, mathematics) and specific aspects of subjects (e.g. vocabulary, geometry).

The significant body of such work which now exists indicates that teachers' cognitions consist of a set of personally-defined practically-oriented understandings of teaching and learning which exert a significant influence on instructional decisions (Clark and Peterson, 1986; Clandinin and Connelly, 1987; Kagan, 1990; Pajares, 1992; Fang, 1996). The widely acknowledged implication of this work is that an understanding of the often implicit psychological bases of teachers’ work is required if we are to go beyond a superficial behavioural conception of instructional processes. That is, comprehending the process of teaching means both describing teachers' actions and accessing the cognitions underlying these.

The insight into teaching which teacher cognition research provides, in turn, has various applications, summarised in Table 3, for teachers, teacher educators, and policy makers.

Table 2
The scope of teacher cognition research

<table>
<thead>
<tr>
<th>Source</th>
<th>Focus</th>
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<tr>
<td>Beach, 1994</td>
<td>Elementary teachers’ beliefs about teaching reading.</td>
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<td>Brickhouse, 1990</td>
<td>Science teachers’ beliefs about the nature of science.</td>
</tr>
<tr>
<td>Briscoe, 1991</td>
<td>A high school chemistry teacher’s beliefs and metaphors.</td>
</tr>
<tr>
<td>Dirks and Spurgin, 1992</td>
<td>Adult basic education teachers’ beliefs about students.</td>
</tr>
<tr>
<td>Konopak and Williams, 1949</td>
<td>Elementary teachers’ beliefs about vocabulary teaching.</td>
</tr>
<tr>
<td>Peterson et al., 1989</td>
<td>Elementary teachers’ pedagogical content beliefs and pedagogical content knowledge in mathematics.</td>
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<tr>
<td>Smith and Shepard, 1988</td>
<td>Kindergarten teachers’ beliefs about children’s school readiness.</td>
</tr>
<tr>
<td>Swafford et al., 1997</td>
<td>Inservice teachers’ content and pedagogical knowledge of geometry.</td>
</tr>
<tr>
<td>Uhlenberg et al., 1993</td>
<td>Preservice and classroom teachers’ beliefs about discipline.</td>
</tr>
<tr>
<td>Wyatt and Pickle, 1993</td>
<td>College reading instructors’ beliefs about teaching.</td>
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Most relevant for this current paper is the observation that teacher cognition research can inform the process of teacher education. In other words, it has practical and not simply theoretical value (thus such research has pragmatic validity—Kvale, 1996). I discuss this issue in more detail later.

4. Teacher cognition in L2 teaching

Although the need for research into the psychological context of L2 teaching has been pointed out over the years (Seliger, 1979; Faerch, 1985, 1986), it is only relatively recently that such work has begun to appear. Table 4 summarises the insight provided by this work into the relationship between cognition and practice in L2 teaching.2

This research supports the finding in the educational literature that, although contextual factors may prevent teachers from acting in accordance with their cognitions, the latter are a very powerful influence on classroom practice. However, none of these studies have focused specifically on grammar teaching. In fact, the only research on language teaching which does shed light on teachers’ perspectives on formal instruction is that which examined the knowledge about language’ (KAL) component of the National Curriculum in the UK (Mitchell et al., 1994a,b Brumfit et al., 1996). Given my current concerns, the most significant finding here was that inadequate knowledge of metalinguistic terminology on teachers’ part made them reluctant to use such terminology in their teaching. There was one other paper which

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2 The findings I summarise here relate solely to the relationship between cognition and practice; for many of these studies, this was but one of a range of issues investigated.
promised to say something about teacher cognition in L2 grammar teaching (Williams, 1994), but closer analysis indicated otherwise. This paper reports on the views about grammar and grammar teaching expressed by teachers on an MA course through their responses to a structured questionnaire containing 6 items (plus a 7th item labelled ‘Other comments?’; Williams, 1994, p. 118). Although the outcomes of this study may be useful for individuals planning MA courses, such work does not investigate teachers’ classroom practices or the cognitions which shape these. Thus, despite its superficial promise (it appears in a text called ‘Grammar and the

<table>
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<tr>
<th>Source</th>
<th>Findings</th>
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<tr>
<td>Bailey, 1996</td>
<td>Teachers’ in-class decisions to depart from their lesson plan were based on these principles: (1) serve the common good; (2) teach to the moment; (3) further the lesson; (4) accommodate students’ learning styles; (5) promote students’ involvement; and (6) distribute the wealth.</td>
</tr>
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<td>Breen, 1991</td>
<td>Teachers’ instructional decisions were influenced by concerns about: learners’ affective involvement, background knowledge, and cognitive processes; conceptions of language as use and usage; and teacher role as guide and manager.</td>
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<td>Burns, 1992</td>
<td>Teachers’ practices were influenced by a network of beliefs they held about language, beginning language learning, and learners.</td>
</tr>
<tr>
<td>Burns, 1996</td>
<td>Teachers’ practices were shaped by beliefs relating to the institutional culture of the school they worked in, their own personal beliefs about language, learners, and learning, and their beliefs about specific instructional tasks and materials.</td>
</tr>
<tr>
<td>K.E. Johnson, 1992</td>
<td>A significant statistical relationship was found between teachers’ theoretical orientations to L2 learning and teaching and their instructional practices.</td>
</tr>
<tr>
<td>K.E. Johnson, 1994</td>
<td>Teachers’ instructional practices were influenced by their personal images of L2 teaching and learning.</td>
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<tr>
<td>Nunan, 1992</td>
<td>Most of the interactive decisions made by a teacher reflected this teachers personal philosophy of language teaching.</td>
</tr>
<tr>
<td>Richards, 1996</td>
<td>Teachers’ instructional decisions were guided by maxims—personal working principles which reflect teachers’ individual philosophies of teaching. Practice sometimes does not reflect teachers' maxims because of contextual factors such as the need to prepare students for examinations or student characteristics (e.g. shyness).</td>
</tr>
<tr>
<td>Smith, 1996</td>
<td>Teachers’ beliefs about second language teaching and learning were the critical factor in influencing the types of decisions these teachers made. The contextual factor which had most impact on teachers’ decisions was student characteristics—their goals, interests, and affective states.</td>
</tr>
<tr>
<td>Ulichny, 1996</td>
<td>A teacher planned her lesson with reference to her principles about L2 teaching and the nature of L2 reading. During the lesson, the teacher modified her plan on the basis of unexpected difficulties which the students had understanding the text she selected; to help students cope, she modified her approach and engaged in practices which did not reflect her principles.</td>
</tr>
<tr>
<td>Woods, 1996</td>
<td>Teachers’ interpretations of classroom events were powerfully influenced by their beliefs, assumptions and knowledge about L2 teaching and learning.</td>
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Language Teacher’ in a section entitled ‘Teachers’ Knowledge of Grammar’), this study merely provides further evidence of how limited our understanding of teachers’ practices and cognitions in L2 grammar teaching currently is.

5. A new perspective

A recent project illustrates the new perspective on research on L2 grammar teaching which I am arguing for here (Borg, 1998a,b; 1999b). This work departs from existing studies of formal instruction in three ways:

1. It acknowledges the centrality of both grammar in L2 teaching and of teacher cognition in the study of instruction.
2. It focuses on what teachers in real classrooms do in teaching grammar and examines the thinking underlying these observed practices.
3. It presents extensive samples of primary data which portray formal instruction and capture teachers’ commentaries on their work.

This project is thus descriptive and interpretive in scope. That is, it considers what teachers actually do in teaching grammar and explores the cognitive bases of these actions. This research perspective allows us to develop a more complete conceptualisation of L2 grammar teaching than we currently possess. To illustrate this point, here are some examples of the findings which have emerged from my work.

1. It is clear that grammar teaching is a truly multi-faceted decision-making process. In discussing their practices in teaching grammar, the teachers I have worked with revealed that, tacitly or overtly, they made decisions about
   - whether to conduct formal instruction at all,
   - what language points to focus on,
   - how to structure grammar lessons,
   - how to present and/or analyse grammar,
   - how metalinguistically explicit to be,
   - what kind of grammar practice activities to utilise,
   - how to deal with students’ grammatical errors.
2. Grammar teaching is thus not a monolithic enterprise; rather, it is defined by teachers’ interacting decisions about a range of issues, each of which constitutes a focus for further research in its own right (e.g. Borg (1999b) I focus solely on the issue of teachers’ practices and cognitions regarding metalinguistic explicitness).
3. Pedagogical dichotomies (e.g. inductive vs. deductive) implied in existing research on grammar teaching become blurred in practice. That is, teachers

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3 By real I mean that teachers were studied in the course of their routine duties. Of course, I am aware of the observer’s paradox (Labov, 1972)—the inevitable effect with the presence of the observer, no matter how unobtrusive this is, will have on the phenomenon under observation. In this sense, no observed phenomenon is wholly ‘real’.
alternate between or blend these traditionally exclusive strategies depending on specific instructional factors. For example, one teacher I worked with felt that inductive learning was more appropriate but believed that students resented a lack of teacher-directed grammar work; hence, she did occasionally conduct mini-lectures on grammar points such as the syntax of multi-word verbs. Another teacher also preferred to encourage students to discover things for themselves, yet he had no objection to explaining grammar when he felt students were unable to reach useful conclusions on their own. Superficially, the pedagogical variability exhibited by these teachers might be interpreted as methodological inconsistency, but insight into the teachers’ cognitions enables us to make sense of their behaviours.

4. Teachers’ decisions in teaching grammar were influenced by their often-conflicting cognitions about language, learning in general, L2 learning, grammar teaching, students, and self. Thus grammar teaching often reflected the resolution of conflicts among competing cognitions held by the teachers. For example, one teacher believed it was important for students to learn grammar, yet he taught grammar very rarely because of his self-perception—he was insecure in his own knowledge about grammar and was afraid he would be caught out by students’ questions. Another teacher taught grammar regularly despite his belief that it did little to promote students’ acquisition of the language. He did so because he believed it was important to address students’ expectations that their course would involve attention to grammar. Once again, it is only by studying teacher cognition that we can gain access to these often hidden motivations for teachers’ instructional decisions.

5. The cognitions underlying formal instruction were generated by key educational and professional experiences in the teachers’ lives. Three categories of experience were particularly influential:

- **Schooling, particularly teachers’ language education.** For example, a teacher who had learnt foreign languages successfully through grammar-translation methods was willing to incorporate elements of such methods into his generally communicative approach to L2 teaching. Another teacher minimised the use of grammatical terminology in her work because her metalinguistically rich experience of L2 learning had not enabled her to become a competent speaker of the language she studied.

- **Teacher education also had a powerful influence on the development of teachers’ cognitions in grammar teaching.** The teachers I worked with had all experienced L2 teacher education programmes which encouraged them to adopt a communicative, meaning-oriented, and student-centred approach to L2 instruction. One lasting outcome of these programmes, for example, was that the teachers shared the view that it was wrong to interrupt students to correct their grammatical errors during oral fluency work. However, not all the principles instilled by teacher education programmes had an enduring effect on the teachers (see next point).

- **Classroom experience also had a strong effect on teacher cognition in grammar teaching.** For example, one teacher who had been originally
trained to avoid explicit talk about grammar had come to understand that students often wanted and felt comfortable with such information; hence he had changed his views on this issue. This is but one example of the way in which the cognitions and practices in teaching grammar held by teachers early in their careers were often modified, intuitively or through conscious reflection, on the basis of subsequent classroom experience.

These findings are but preliminary insights into the nature of formal instruction, yet they do illustrate the potential which the study of teacher cognition has for extending our current understandings of L2 grammar teaching. Such work also leads to the development of more focused research questions for the study of grammar teaching. Thus, at the start of my project, I was guided by general questions such as ‘how do teachers teach grammar?’ However, by studying what teachers do and exploring the kinds of instructional decisions which grammar teaching involves, I have formulated a set of specific questions which can provide the basis for continuing research on grammar teaching. These questions are presented in Table 5.

Table 5
A descriptive and interpretive perspective on L2 grammar teaching

These questions are initially descriptive. The interpretive perspective is obtained when we ask teachers to make explicit the rationale for the practices described through these questions. (e.g. Why do they sequence grammar activities in a particular way? What factors influence the way they handle students’ errors?).

Content
- How much time do teachers dedicate to grammar teaching?
- What language points do teachers focus on in grammar work? How are these chosen?

Materials
- What are the sources of the grammar materials teachers use?

Lesson Structure
- Do teachers sequence grammar teaching activities in any particular way(s)?
- Within the context of a whole lesson, at what stage(s) does grammar work occur?

Strategies
- To what extent do teachers explain grammar? How?
- Do teachers encourage students to discover things for themselves? How?
- Do teachers encourage students to become aware of grammar rules? How?
- Do teachers promote the use of grammatical terminology in teaching grammar?
- Do teachers provide students with opportunities to use grammar? How?

Outcomes
- Do teachers check if students have understood and ‘learnt’ the grammar under study? How?

Questions About Grammar
- What kinds of questions about grammar do teachers ask the students?
- How do teachers respond to students’ answers to these questions?
- Do teachers encourage students to ask questions about grammar?
- How do teachers respond to such questions?

Grammar Errors
- How do teachers deal with students’ spoken and written grammatical errors during accuracy and fluency work?
In addition, research on teacher cognition provides data which can serve as the basis of more effective teacher education and development initiatives. Currently, L2 teacher educators can, at best, introduce trainees to instructional strategies for teaching grammar without being able to illustrate how and why (and ‘if’, I would add) L2 teachers in real classrooms utilise these strategies. Teacher cognition research addresses this problem by providing L2 teacher educators with detailed, authentic accounts of teacher thinking and action in formal instruction. The analysis and discussion of such accounts can enhance the development of reflective skills in teachers in training (Richert, 1991) and also stimulate practising teachers to evaluate the bases of their current practices⁴ (see Borg, 1998b, for a practical example of how research on teacher cognition in grammar teaching can be used to promote L2 teacher development).

In conclusion, a comment on the evaluation of teacher cognition is also warranted. Given that we lack indisputable knowledge about effective L2 grammar teaching and learning, the evaluation of teacher cognition does not involve deciding which cognitions are ‘right’ (i.e. which promote learning) and which are ‘wrong’. Rather, in my work so far, teachers’ cognitions have been evaluated with reference to several alternative criteria: (1) the clarity of the reasons teachers give for their instructional decisions; (2) the consistency of teachers’ positions (e.g. the congruence among their cognitions and practices or the internal consistency among cognitions themselves); (3) teachers’ ability to cite evidence (e.g. classroom data, professional literature) to support their cognitions; (4) teachers’ awareness of the factors which have led to the development of these cognitions; and (5) teachers’ willingness to consider alternatives to the grammar teaching practices and cognitions which they currently embrace (see Borg, 1999a, for a more detailed discussion). This evaluative process equates quality teaching with teachers’ ability to reflect on their practices and cognitions in formal instruction, to seek concrete support for the efficacy of these (such support may include evidence of student learning), and to clarify and/or modify them where they are found to be vague and/or unwarranted. In future, as we continue to learn more about what teachers do and think in teaching grammar, studies which investigate students’ perspectives on these actions and thoughts will also be needed. Such work may ultimately shed light on the relationships between teacher cognition and student learning in L2 grammar teaching.

6. Conclusion

The essence of my argument here is that the study of L2 grammar teaching should reflect the trends evident in mainstream educational research by awarding more attention to the role of teacher cognition. Teacher cognition research extends our current understandings of formal instruction by shedding light not only on what

⁴ The power of these accounts is captured in the reaction of one reader to Borg (1998a) “although I myself do not teach grammar, the detailed description of his [the teacher in the study] thoughts/actions did inspire me to reconsider some of my own teaching practices” (personal communications).
teachers do, but also by providing insight into the cognitive bases of these practices. Such data can play a central role in L2 teacher education and development initiatives which stimulate teachers to reflect on and hence to improve the quality of their own grammar teaching practices.

References


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