Understanding the Complex Processes in Developing Student Teachers’ Knowledge About Grammar

<ABSTRACT

This article takes the view that grammar is driven by user choices and therefore complex and dynamic. This has implications for the teaching of grammar in language teacher education and how teachers’ cognitions about grammar, and hence their own grammar teaching, might change. The participants in this small, interpretative study, students on an MA programme in the UK, were being taught grammar from a functional perspective, but with mainly traditional classifications and metalanguage. They were required to negotiate solutions to grammar tasks designed to provoke ‘cognitive conflict’ (Tocalli-Beller 2003) when the authentic language use of the texts did not conform to the students’ prior knowledge. This was assumed to stimulate a high quality of engagement with language (EWL; Svalberg 2009), thus facilitating the construction of new or enhanced knowledge about grammar. Analysis of the participants’ learner diaries, interviews and workshop interaction reveal that cognitive conflict is an essential factor in the emergence of new understandings of complex grammar features and of grammar as meaning in context. The study contributes to the literature on inquiry based approaches to language learner education by the insights it provides into knowledge creation in such environments.

Key words: cognitive conflict; complexity; engagement with language; knowledge about grammar; teacher cognition.
INTRODUCTION

Teaching programmes depend for their implementation on teachers’ unique knowledge and understanding (Freeman, 2002), including their subject-matter cognitions, and cognitions about teaching and learning. Most of the SLTE literature on teacher cognition is, for obvious reasons, concerned with the latter - either “the activity of teaching and learning” or “the teacher as learner” of teaching (Freeman and Johnson, 1998, p. 406). This article, in contrast, makes a case for the importance of the language teacher as learner of subject-matter knowledge and of understanding the development of such teacher knowledge.

The study presented below is concerned with the role of grammar pedagogy in Second/Foreign Language Teacher Education (SLTE) and addresses the question how grammar might be taught so that it equips student teachers, in subject knowledge terms, for their own classrooms. Grammar courses in SLTE have fundamentally different aims from courses for language learners. The ultimate objective of the latter is to improve the learners’ use of language while grammar courses in SLTE aim to equip student teachers with declarative knowledge about grammar (KAL) they can subsequently draw on, explicitly or implicitly, in their own teaching. Grammar teaching pedagogy may be addressed on the same SLTE course, or elsewhere in the course programme.

The course below adopted a functional view of grammar as a complex, dynamic system of speaker/writer choices in context. It differs from a ‘traditional’ view of grammar as a fixed body of knowledge at sentence level (e.g., a set of rules). The course assumed that teachers need to be able to deal with authentic language use, and not be dependent on the text book. Grammar rules in text books and pedagogic grammars are usually partial, frequently misleading and sometimes wrong (Berry, 2014; Svalberg, 2001) and teaching materials do not necessarily address what the learners need to know when they need it.
This implies that teachers require an appreciation of grammar as user driven and contextual (Ellis & Larsen-Freeman, 2009) and a good understanding of sometimes cognitively demanding grammar concepts. In addition, teachers need to be able to talk about grammar with their students (if and when appropriate), a particular challenge for those who teach a language other than their first. Hence a functionally oriented grammar course in SLTE, in addition to imparting ‘grammar facts’ (e.g., word classes, clause types), needs to address teacher cognitions in two ways: by changing the student teachers’ beliefs about grammar (what grammar is and how it works) and by enhancing their thinking and analytical skills in the area of grammar, and their ability to verbalize it.

The study discussed here focused on the learning process in a short subject-matter course attempting to achieve this. It set out to understand to what extent and how desired changes in cognition might be achieved. It is part of longer term efforts by the author (Svalberg, 2012) and co-researcher (Svalberg & Askham, 2014; ‘Forthcoming’) to understand how student teachers’ learning emerges from a peer interaction environment.

The course followed a trend in general teacher education described by Crandall (2000, p. 34) as a shift “from transmission, product-oriented theories to constructivist, process-oriented theories of learning, teaching, and teacher learning”, which has also been adopted in SLTE. Wright (2010) outlines new forms of SLTE pedagogy, which “share the primacy of experience (or ‘doing’) as a precursor to conceptualising in formal training sessions” (Wright 2010, p.274). This coincides with Kumaravadivelu’s (2012) view that SLTE pedagogy should no longer seek “to transmit a pre-selected and predetermined body of knowledge”, but should adopt “an inquiry oriented [model], with the ultimate goal of producing teachers who are autonomous individuals” (2012, p.50). In the current study, the course adopted a Language Awareness (LA) perspective (cf. Borg, 1994; Wright & Bolitho, 1993), which offers such an inquiry-based approach. As teachers’ cognitions about teaching are heavily influenced by
their prior learning experiences (Crandall 2000), it was hoped that this choice of pedagogy might also serve as a model and help the student teachers develop their own theories about learning.

An LA approach views language as dynamic rather than a fixed body of knowledge and involves learners both cognitively and affectively (see further discussion below) in active investigation of its use, where they talk analytically about it, typically to each other, exploring and discovering how it works; a process which has also been termed ‘languaging’ (Swain, Brooks & Tocalli-Beller, 2002; Swain & Lapkin, 1998). The aim of the LA approach is to equip learners not only with subject knowledge but also with learning skills, thereby promoting learner independence and facilitating ongoing – perhaps life-long – learning.

Tasks, in this approach, are often referred to as ‘consciousness raising’ (CR) and are the ‘doing’ element referred to by Wright (2010) above. Ellis (2002) identifies characteristics of a CR task. It focuses on a specific linguistic feature present in data the learners are given to analyse. This involves intellectual effort on the learners’ part and may require stages of misunderstanding, renewed analysis and negotiation until the learner (or learners in a group) arrive at the desired analysis (e.g., a classification, explanation or rule).

In this study, the student teachers worked on authentic texts (e.g., a page of a novel or popular science text), identifying and analysing specific grammar features (e.g., the form and meaning of modals in context). The tasks involved the students in ‘languaging’ in order to solve a linguistic puzzle of some kind. The texts chosen represented a range of cultural settings and types in an attempt to engender a positive affective response from a maximum number of students. The learning process will be discussed in more detail below. Further details about the tasks will also be provided.

The sections that follow will first discuss the complexity view of grammar adopted on the course, followed by a review of some of the research on teachers’ KAG. I then discuss the
dynamic learning process, engagement with language (EWL; Svalberg, 2009), in light of evidence from SLA, and with particular reference to grammar teaching and learning. The section finishes with the research questions. The study, its setting, participants, data sources and trustworthiness are then presented. In the ‘findings’ section that follows, diary, interview and group interaction data are presented. A brief discussion follows and the paper closes with some conclusions.

<A> COMPLEXITY VIEW OF GRAMMAR

As mentioned above, in this study grammar is seen as complex and dynamic. Meaning (in its widest sense) is central and so semantics and pragmatics are not separated from the grammar but are interacting and interdependent levels of realisation (Burns & Knox 2005, p.236-237). This is apparent in the three ‘metafunctions’, of Systemic Functional Grammar (SFG): ideational (language as information), interpersonal (language as interaction) and textual (language as message), which necessitate a consideration of the sociocultural context in which language is used (Halliday, 1985; Halliday & Matthiessen, 2014).

There is a good fit between an LA approach and functional language theories as the latter imply that grammar is a complex, dynamic system (Beckner et al., 2009; Butler, 2008; see also other contributions to Ellis & Larsen Freeman, 2009); users make choices based on their own purposes and priorities, often following conventions but also exercising agency by being creative and subversive, and are also influenced by a host of external factors including the interlocutor and the setting.

According to this view, grammar is not a fixed, unchangeable set of components and rules (cf. Derewianka, 2007). Instead it is constantly constructed by its users through the choices they make (Ellis & Larsen-Freeman, 2009). This is confirmed by corpus linguistic research, for example Hinrichs and Szmrecsanyi (2007) and Leech and Smith (2006; 2009)
who identify recent changes in British and American English speakers’ and writers’ use of grammar, for example in the use of genitive constructions and modal verbs.

As Ellis (2002) points out, an important factor in sociolinguistic change and variation is our highly developed receptivity to frequency in input. Collectively, therefore, language users both maintain the language and drive change by the choices they make, adapting and changing their linguistic behaviour in what is normally an unconscious process. The usage driven and dynamic nature of language is apparent in authentic texts of various kinds, which the teacher might choose as teaching material or which learners may encounter outside class in books, papers, television, film and music.

Translating a complexity view of grammar into teaching is not a simple undertaking. The advantages of SFG, for example its text level analysis and its attention to purpose and audience (Halliday, 1985; Halliday & Matthiessen, 2014), are also its main challenges. Gebhard (2010), discussing SFG in the teaching of academic writing, summarizes the critique against it, including Bourke’s (2005) conclusion (not shared by Gebhard) that teachers find it too technical and complex. Burns and Knox (2005) admit that SFG is not yet widely known and thus teacher educators are not able to build on prior knowledge to any large extent. A number of grammar books for teachers have tried to bridge this gap, for example Coffin, Donohue and North (2009) and Cameron (2007). Functional grammars in general (not only SFG) also have strengths that are particularly important for teachers. One is their foregrounding of the connections between meaning (in its widest sense) and form. Related to this is the idea that grammar is not a straitjacket of rules but a meaning making resource which allows for individuality and creativity.

The grammar course in this study had to balance the likely novelty of a functional approach (a potential drawback on a short course) against its merits. The decision was to adopt a compromise. Mostly traditional classifications and metalanguage were used, but at
the same time a functional view of language was incorporated. Thus meaning-form connections were addressed in terms of speakers’ choices and purposes, and the three metafunctions of SFG were referred to when appropriate. I will refer to this approach as ‘functionally oriented’.

The view of grammar as a complex system of user choices calls into question the meaning of KAG; what precisely is the subject-matter knowledge language teachers need in regard to grammar? In addition to grammatical classifications and metalanguage, and a few descriptive rules (e.g., of the kind ‘tense is marked on the first verb of the verb group’), a functional orientation means that teachers need to know what choices are available to speakers/writers in a particular context, what distinguishes those choices from one another, and hence why the speaker might opt for a particular realisation (rather than another). In other words, KAG needs to include an awareness of the form-meaning links which are available in a particular context but have not been chosen, as well as the meaning and effect of the actual realizations on the page (see task example further below). As users’ choices are driven by factors not only at clause/sentence level but also at text level, and by socio-cultural factors, highly developed teacher KAG will include text level features, for example an understanding of cohesion, theme-rheme structure, genre and register and a consideration of the context of language use.

An SLTE grammar course can aim to help teachers construct a solid KAG foundation by acquainting them with a functional view of grammar and equipping them with investigative tools, including classifications, metalanguage, noticing and language analytical skills. What a course cannot do (in the necessarily limited time available) is equip teachers with all the KAG they require in their classrooms. The learning process needs to continue throughout their career, as indicated by Borg (1994). In the following section I will discuss the rationale for the LA approach in more detail, and how it was applied in this study.
RESEARCH ON TEACHERS’ KNOWLEDGE ABOUT GRAMMAR

A great deal of research has been conducted on the KAG of prospective, novice and experienced teachers to find out how much grammar they know and what they know. Most take a traditional view of KAG and it generally involves written tests of grammar terminology and concepts at sentence level.

A test by Bloor (1986) spawned a number of similar studies. It assessed knowledge of parts of speech, grammatical functions (subject, direct object etc.) and grammar rules. The participants were prospective English language teachers - 63 undergraduate students in Modern Foreign Languages and Linguistics at British universities. Bloor found the participants’ knowledge severely lacking. He referred to their grasp of grammatical functions in particular as ‘fairly widespread ignorance’ (p.160).

To find out if UK undergraduate students’ (and hence potential teachers’) KAG had improved, Alderson & Horak (2010) used the same item formats but in addition included error identification and rule explanation. Results were compared with Bloor (1986) and two intervening studies at Lancaster (Alderson, Steel & Clapham 1997) confirming that the teaching of grammar in UK schools was still deficient. Non-UK students performed significantly better overall than UK students and studying a foreign language seemed to have a greater positive effect on grammar knowledge than English Language A-level.

In Hong Kong, Andrews (1999) revealed that practicing and prospective secondary school teachers of English, all non-native speakers of English, were better at identifying parts of speech and grammatical functions than at providing appropriate grammar terms. Non-native speakers were somewhat better overall than English L1 speakers but all – even the practising teachers - performed poorly on providing rules and explanations. Many participants, according to Andrews (1999), were unable to deal “with even quite elementary
errors” (p. 155). One of the few exceptions to this negative pattern is Bailer et al. (2014), who found the KAG of ten Brazilian EFL teachers better than expected. Contrary to the researchers’ expectations all the teachers were able to explain grammar rules and use metalinguistic terms to do so. The small sample means the results have to be treated with caution.

Tests have been useful in highlighting gaps (or strengths) in teachers’ KAG. They are, however, only able to test what the participants can be expected to know (i.e., what they have been exposed to) and do not address gaps due to shortcomings in prior education, for example a lack of awareness of text level grammar. Limitations are also imposed on large scale tests by reliability and practical issues, for example how the tests can be scored, making it difficult to test analytical skills and authentic, contextual use of grammar. Perhaps the most thought provoking insight from the studies above is that teachers do not necessarily develop KAG on the job (Andrews, 1999), making grammar courses in teacher education all the more essential.

Several studies have shown that the ability to correct errors, name rules, or identify and name grammar features, is not necessarily accompanied by an ability to provide grammar explanations. Tsang (2011) investigated the KAG of 20 in-service primary school teachers in Hong Kong, at word, phrase and clause level. They scored more highly on ability to produce and identify grammar features and to correct grammar errors than on explaining rules. The mean scores were 50% for error correction but only 19% for explanation of the relevant rules. In general, studies which include a test of teachers’ ability to explain grammar consistently show similar results (Andrews 1999; Andrews & McNeill 2005). As Andrews and McNeill (2005) point out, formulating an explanation is cognitively more challenging than either identifying an error or identifying a grammatical feature. Tsang’s (2011) study also highlighted that explaining grammar is easiest at word level, and most difficult at clause
level. These findings underline the importance of the quality of teachers’ cognitions about grammar.

In a different context, Orsini-Jones (2008) studied learners on a course designed to help undergraduate Modern Foreign Languages majors at a UK university develop a quality of KAG that would make them effective and autonomous language learners. One of the grammar notions taught was constituent structure or, in SFG, the ‘rank scale’ (morpheme, phrase, clause), that is the notion that smaller meaningful components combine to make up larger meaningful components. The students’ grammar analyses of sentences, and student interviews, showed that most found the rank scale and its sub-components cognitively challenging. Orsini-Jones (2008; drawing on Meyer & Land, 2005) argues that they are ‘threshold concepts’. A threshold concept is a notion which once grasped is a gateway to further knowledge; it has the power to transform how we see things. Constituency transforms sentences from strings of words to assemblages of units which can be moved around, expanded, and replaced. An understanding of the phrase, for example, helps explain how a long string of words such as ‘a long string of words’ is equivalent to one word, in this case ‘it’. It also includes the notion of ‘embedding’. Phrases can be embedded in phrases as in [a long string [of [words]]], where ‘string’ is the head of one Noun Phrase (NP), and ‘words’ the head of another NP (inside a Prepositional Phrase). In language learning, learning how to expand phrases, for example “my shoes” to “my favourite shoes with the pink straps” or “good” to “really quite good” has the potential to enrich the learners’ language. Teachers who understand phrases thus have the potential to help learners in this regard.

Inherent in the notion of threshold concept is the cognitive challenge they pose. Hence, such concepts are not transmittable; they need to be actively constructed by the individual. Some of the students in Orsini-Jones (2008) found that collaborative learning
helped them understand constituent structure to a point where they were able to apply it in analysing sentences.

As important as their measurable knowledge is teachers’ confidence in their KAG. In a study involving two teachers, Borg (2001, p. 27) concluded that their grammar confidence (whether justified or not) affected how much grammar they taught, what kind of grammar information they provided, whether they were willing to engage spontaneously in grammar work, how they responded to students’ grammar questions, how they reacted when challenged, and whether or not they encouraged classroom discussions about grammar (see also Borg, 2005; Grossman, Wilson, & Shulman, 1989). As this indicates, and as Wright (2002) points out, one of the main challenges in SLTE is the transfer of newly created knowledge to classroom practice. Wright (2002) suggests a five step language awareness approach in which KAG is explicitly linked to teaching (p. 125), consisting of ‘doing’ (initial analysis of data), ‘reviewing’ (in groups or plenary), ‘making sense’ (tutor input or reading on the main issues raised by the text; forming pedagogical rules), ‘linking’ (implications for T & L) and ‘to the classroom’ (planning teaching; peer/micro-teaching).

Ideally then, grammar pedagogy in SLTE should help student teachers develop their KAG (including threshold concepts) to a level where they can apply it to the analysis of authentic texts and learner errors, provide explanations, and also have the confidence that they can do all of this in the classroom.

THE DYNAMIC LEARNING PROCESS: ENGAGEMENT WITH LANGUAGE
Below I will argue that an SLTE grammar pedagogy which engenders high quality EWL (Svalberg, 2009) is most likely to result in effective teacher learning. The first section looks at some evidence from Second Language Acquisition (SLA) research and presents the EWL
model. There is then a brief discussion of the far from straightforward relationship between teachers’ KAG and their ability to apply it in the classroom.

The Evidence from SLA

The language learning/learning about language process is not fully understood but researchers agree on at least three points. There is widespread agreement on the importance of noticing/awareness (Abu Radwan, 2005; Al Hejin; 2004; Posner & Petersen, 1990; Schmidt, 1990, 2001; Schmidt & Frota, 1986). Also acknowledged as essential factors are motivation - recently addressed in the context of individual learner differences (Dörnyei, 2005; Ehrman, Leaver & Oxford, 2003) and identity (Dörnyei & Ushioda, 2009), including its role in language teacher development (Kubanyiova, 2009).

Finally, much current language teaching and learning research, including my own, is based on the premise of sociocultural theory (Lantolf & Beckett, 2009; Vygotsky 1986) that learning typically emerges in social interaction. As mentioned above, in the language classroom it will involve ‘languaging’ (Swain, Brooks & Tocalli-Beller, 2002; Swain & Lapkin, 1998). Languaging has been studied in Language Related Episodes (LREs), where learners talk with peers about language for the purpose of solving a task. It has been shown that this is likely to facilitate learning (Swain, Brookes & Tocalli-Beller, 2002; Swain & Lapkin, 1998).

The value of ‘talking about’, that is reflection and articulation, are summed up by Freeman (2002, p.11) as follows: “one needs the words to talk about what one does, and in using those words one can see it more clearly”. Although Freeman here refers to talking about teaching, the same applies to grammar. By reflecting on their solutions to grammar tasks, and verbalizing them, the students can see more clearly not only what they (or their peers) have done and why, but also what the speaker/writer of the text they are working on
has done and why. In this way, grammar becomes lived experience rather than words on a page, contributing to the unique knowledge of each teacher.

The complex interaction of factors in the learning process: cognitive (e.g., focusing and attention), affective (e.g., motivation) and social (e.g. in collaborative group work) is captured by the EWL construct (Svalberg, 2009), the process by which LA (in this study more narrowly defined as KAG) is created and enhanced.

The maximally engaged individual is focused on the language, willing to engage with it and positive towards it, and is interactive (e.g., by initiating and sustaining languaging). Svalberg (2009) assumes that EWL may vary both in quantity (how engaged a person is) and quality (how a person is engaged) and that this is facilitated or obstructed by a number of interacting factors, for example peers (in a group work context), the task, and the learner’s own characteristics and preferences (Svalberg & Askham 2014; ‘Forthcoming’). During EWL the individual draws on their prior knowledge (prior LA) and the outcome is new or enhanced LA, resulting in a metacognitive cycle, shown in Figure 2.

**FIGURE 2**

The Engagement With Language – Language Awareness Cycle (Svalberg 2009, p. 248)

![Diagram of the Engagement With Language – Language Awareness Cycle](image)

One manifestation of EWL is languaging, but an individual can also engage silently with language, and may sometimes do it independently of an interactive setting.
A factor which has the potential to engender good quality, sustained EWL is ‘cognitive conflict’ (Tocalli-Beller, 2003). According to Tocalli-Beller and Swain (2005, pp. 5-6):

A cognitive conflict is an intellectual conflict; it is issue-oriented, and it enhances learning as it usually leads to the discussion of different points of view.

And they add:

To our knowledge, there has been little direct investigation in L2 research of cognitive conflicts and the learning that they may generate.

Cognitive conflict can facilitate learning by serving as an impetus to collaborative EWL, where peers sharpen their understanding, analytical skills and metalanguage through negotiation.

In the teacher cognition literature, ‘conflict’ has also been addressed in terms of cognitive and affective (or ‘emotional’) dissonance. Kubanyiova (2012) discusses examples of the latter in the form of tension between a desired teacher self, and the perceived actual self. The author shows that affective dissonance is necessary but not sufficient to provoke conceptual change. For reasons of space, this article will not discuss (the admittedly important) affective dimensions of teacher learning and development further but it is perhaps useful to keep in mind that cognitive and affective dissonance are not necessarily independent of each other. Cognitive conflict may trigger affective tension, sometimes expressed as anxiety, which can be either facilitative or a hindrance (Svalberg, 2012).

**Grammar knowledge and grammar teaching**

In an SLTE context, the reason for developing ‘subject matter cognitions’, represented here by KAG, is to put it to use in the classroom. It therefore needs to be matched by pedagogical content knowledge (PCK, Shulman, 1986; see also Andrews, 2001, 2003) which draws on a wide range of knowledge bases, including the teacher’s knowledge and beliefs about
pedagogy and learning, the context, their learners and so on. Freeman (2002, p.6) considers PCK a "messy and possibly unworkable" construct when applied to language teaching. Andrews (2003, p.79) does not provide a solution to this but argues for "the inclusion of [teacher language awareness] as an additional component of PCK specific to the language teacher". For the purposes of this article, I will consider PCK and KAG as distinct but closely interacting cognitive constructs.

A limitation of the study was that it did not address what effects the course might have had on the participants’ pedagogic beliefs and practices. It restricted itself to the development of the student teachers’ KAG, and the role of cognitive conflict in this process.

The study explored the following questions:

1. What kinds of grammar and grammar related knowledge emerge from the collaborative learning environment?

2. What is the role of cognitive conflict in this process?

THE STUDY

The MA-level, grammar course for language teachers

The course was part of an MA programme with two streams, one for pre-service teachers (MA TESOL) and one requiring at least two years teaching experience (MA Applied Linguistics & TESOL). The great majority of the students were international, predominantly from the People’s Republic of China. There were also a few UK and EU students. Only a handful were English L1 speakers.

The course consisted of 14 hours in total over seven weeks; seven hours of lectures, each followed by an hour long workshop (also referred to as ‘seminar’ below) on the same topic. I was the main tutor in charge of the course, and I and a colleague shared supervision of the workshops in which the students worked in collaborative1 groups of 5-7 on consciousness
raising tasks. They were typically asked to identify all instances of a particular feature, such as noun phrases (NPs), in an authentic text, and then analyse them in some detail (Fig.1 below). Ten minutes into the workshop, the students were given a partial key (e.g., of the first sentence) against which they could evaluate their own analysis. By the end of the seminar each group formulated one remaining doubt or disagreement arising from the task into a question for the tutor, who answered it online.

To encourage the use of English, the groups were required to include members representing more than one L1. This was meant to ensure that all the students were fully included in the collaborative interaction and was an opportunity for all to practice using English grammar metalanguage.

The workshops aimed to create an environment conducive to in-depth EWL by means of tasks, such as in Fig.1 below, which required a high degree of learner autonomy (Dam et al., 1990; Smith, 2008). The level of task difficulty was deliberately high. The tasks had only a partial key, a feature meant to stimulate languaging and perseverance. Although part of a task might be completed by briefly checking a classification with the rest of the group, there were always other items which provoked cognitive conflict (Tocalli-Beller, 2003).

Students’ interpretations and realizations of the task might, however, differ from those intended by the tutor on a number of levels, including prior knowledge, having the language to carry out the task, learning styles, and attitudes to learning and teaching (Kumaravadivelu, 1991). Kumaravadivelu (1991) does not suggest we should be striving for an absolute match. Instead we need “an understanding of the learners’ capacity to draw their own maps so that we can promote successful learning outcomes” (p. 107). The tasks were therefore loosely controlled; the groups did not report back and could choose how much of the task to complete (if they could not do it all).
In summary, the workshops set out to help the students develop a solid KAG base, including the tools to continue learning. The aim was to engender high quality EWL by students who were focused on the task, willing to engage, and interactive.

The task below was used on the course in the teaching of tense and aspect. The students used a tense tracking diagram (TTD; Svalberg, 1995) consisting of time lines, to help them distinguish between verb form and time reference. They also discussed the writer’s use of aspect. For example, in the first sentence of the task text (below), ‘I studied; I was returning’ and ‘I had learnt’ would be as grammatically correct as the author’s chosen realisations. The issue the students were asked to discuss was why the writer made the choices he did.
FIGURE 1.
The Beginning of a Collaborative Grammar Task

Workshop Task

1. Do a TTD analysis of the use of tense in the first and last paragraphs of this text. Include only the finite verb groups in your analysis. (A blank TTD has been provided after the text.)

2. Analyse the use of aspect in the first and last paragraphs. For perfect and progressive aspect, remember to include only verb groups which contain both Aux and Main Verb.


It was, gentlemen, after a long absence -seven years to be exact, during which time I was studying in Europe - that I returned to my people. I learnt much and much passed me by - but that's another story. The important thing is that I returned with a great yearning for my people in that small village at the bend of the Nile. For seven years I had longed for them, had dreamed of them, and it was an extraordinary moment when I at last found myself standing amongst them. They rejoiced at having me back and made a great fuss, and it was not long before I felt as though a piece of ice were melting inside of me, as though I were some frozen substance on which the sun had shone - that life warmth of the tribe which I had lost for a time in a land 'whose fishes die of the cold'....
Other tasks dealt with identification and analysis of NPs, adjective phrases, adverbials, verb groups, tense, modality, complex clauses and information packaging (including theme/rheme structure).

The course was assessed by means of a written, closed item test on identification and classification of grammar features in authentic text (counting for 75% of the mark) and an oral presentation on a grammar teaching point of the student’s choice and suggestions for how to teach it to a specified learner group (25%).

The participants and the data will be described below, followed by brief reflections on the trustworthiness of the study.
<B> Participants</B>

**TABLE 1**

Participants with Number and Extent of Diary Entries

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Entries</th>
<th>Words</th>
<th>Grammar</th>
<th>Teaching</th>
<th>L1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Test</td>
<td>Experience</td>
<td></td>
</tr>
<tr>
<td>Amelia</td>
<td>5</td>
<td>612</td>
<td>81.75%</td>
<td>Yes</td>
<td>Chinese</td>
</tr>
<tr>
<td>Chloe</td>
<td>7</td>
<td>782</td>
<td>80.75%</td>
<td>Yes</td>
<td>Chinese</td>
</tr>
<tr>
<td>Ella</td>
<td>7</td>
<td>2492</td>
<td>78%</td>
<td>No</td>
<td>Chinese</td>
</tr>
<tr>
<td>Emily</td>
<td>6</td>
<td>1,379</td>
<td>81.75%</td>
<td>No</td>
<td>Chinese</td>
</tr>
<tr>
<td>Jack</td>
<td>7</td>
<td>1,140</td>
<td>63.75%</td>
<td>Yes</td>
<td>Arabic</td>
</tr>
<tr>
<td>Jessica</td>
<td>7</td>
<td>2,492</td>
<td>84%</td>
<td>Yes</td>
<td>Chinese</td>
</tr>
<tr>
<td>Lucy</td>
<td>7</td>
<td>1,924</td>
<td>88.5%</td>
<td>Yes</td>
<td>Chinese</td>
</tr>
<tr>
<td>Mia</td>
<td>6</td>
<td>830</td>
<td>77%</td>
<td>No</td>
<td>Chinese</td>
</tr>
<tr>
<td>Sophie</td>
<td>6</td>
<td>984</td>
<td>62%</td>
<td>Exp</td>
<td>Chinese</td>
</tr>
<tr>
<td>Isabelle</td>
<td>0</td>
<td>-</td>
<td>80%</td>
<td>Exp</td>
<td>English</td>
</tr>
</tbody>
</table>
As Table 1 shows, six of the teachers had some teaching experience and three were pre-service teachers. All except two were native speakers of Chinese. One student, Isabelle, who had not volunteered to keep a diary but agreed to be recorded and interviewed, was included as the only L1 speaker of English. The mostly high scores on the final, closed item grammar test may reflect a skewed sample due to the reliance on volunteers. On the other hand, the results of the whole class were generally high.

With the first research question in mind, the diary and interaction data were analysed in a search for affordances, noting the knowledge areas. In the process of doing so, the researcher noticed the prevalence of cognitive conflict. A second analysis therefore focused on this aspect of the learning process and relevant parts of the interaction and interview data were analysed in more depth, line by line, noting what seemed to contribute to cognitive conflict and how the students responded to it.

The Data

Data collection and transcription were shared between the two researchers, initially for case study research (Svalberg & Askham, 2014; ‘Forthcoming’). The current research questions emerged in the process of addressing other questions for the cases studies and so for the current study the author (with the colleague’s permission) re-analysed diary, interview and interaction data across participants.

Interviews. The post-course interviews lasted about 30 minutes. A stimulated reconstruction format was adopted, whereby each interviewee was played segments of a recording of interactions where they were involved. The interview questions explored how they perceived their own participation. Two students also participated in a second interview 15 months later. The interview extracts below are from the immediate post-course interview except when otherwise indicated.
Peer Interaction. After giving written consent, one group was recorded in each workshop except the first. The membership of the groups fluctuated somewhat so while some students participated only once, others were recorded two or three times. The interaction was transcribed verbatim and divided into ‘episodes’, each dealing with a different topic. Some episodes were discontinuous, that is the students sometimes returned to the same topic more than once during a workshop. The transcripts provide an insight into both what they were in the process of learning and how.

Diaries. Nine students wrote a reflective account of each workshop, including what happened and how they felt about it. There was no specified length or required headings. The diaries consisted of an entry for each, or most, of the workshops. The length varied from 612 to 2,492 words. They provided a window on the students’ perceptions of the collaborative EWL process and what they had learnt. Students other than the diarists also appear in the interaction transcripts. All gave their written consent to be recorded for research purposes. Extracts below are labelled with the workshop number (e.g., ‘Diary 3’).

Trustworthiness of the Study

The view of the subject-matter knowledge as complex and emergent (Larsen-Freeman & Cameron, 2008) has implications for the claims that can be made. The findings contribute to our understanding of the knowledge creation process, which is assumed to be non-linear, dependent on the interaction of multiple factors residing in the process itself as well as in the learner, their history and their environment but no claims are made about the permanence of the students’ knowledge or about causality.

The author and her colleague were tutors on the course, which may have had some influence on what the diarists wrote. They do, however, report both successful learning and frustrations, and such frankness adds to the overall credibility of the diaries. Another
consideration is language proficiency. Sophie’s and Jack’s interviews in particular indicate that limitations in their command of the spoken language (not only metalanguage) may have been an obstacle to successful EWL, and difficulties with written expression may have impacted on the extent or depth of diary entries generally.

The researcher triangulated diary, interaction and interview data to check interpretations. This holistic approach, in my view, adds to its trustworthiness by not attempting to simplify what are in reality complex, dynamic processes.

<FINDINGS>

<Grammar and grammar related knowledge emerging from the collaborative learning environment>

Some of the diarists provided lists of the grammar they felt they had learnt in each workshop but they also commented more extensively on insights gained, and questions remaining. Below I will focus mainly on the understanding of two things: the role of context, and the phrase. Both are key notions in the understanding of grammar but highly complex and hence cognitively challenging.

The importance of context. The idea that grammar needed to be interpreted in context was a novel idea to many. Five of the eight diarists made explicit reference to it. Emily writes about the interpretation of past tense verbs:

The teacher said it largely depend on the meaning of the verb in the context. If the verb refers to an action happens in the present, it will be regarded as in the speaker’s time even it is in the form of past. Therefore I can’t isolate words from the whole text.

(Diary 5)

She returns to this theme in the interview when she is asked if the course has changed her ideas about grammar.
Yeah – it change a lot – because – in the past I always think that grammar is just grammar – there is nothing related to the text – to the – to the context – but – I remember there is – erm – there is one workshop related to times – it is about speaker time and the past time and – you said – whether it is speaker time or the past time should be related to the meaning of the text – not the form of the text ... but in the past I just – I just think – erm – if the word – for example is – and it was ‘ed’ – alright – it’s past. (Interview)

The interviewer probes for confirmation that some of Emily’s ideas have changed and she responds:

Yeah – and – erm – I got to know that learning grammar is not all about memorising – it’s not all about doing exercises – it is more about analysing – yeah – analysing the context which the grammar is used. (Interview)

Another student who commented on the importance of context was Mia. In her diary she writes:

In the seminar, the discussion about the meaning or function of the modal was very interesting, because we need to base on the context. Furthermore, one modal might have several meanings or functions. (Diary 6)

Mia was one of two students who had a follow-up interview 15 months after completing the course. At that point she was asked about any possible impact the course might have had on her work in TESOL. Mia first describes the traditional grammar teaching she experienced before enrolling in the MA and then states that grammar “should not be separated from the text” and “grammar should be taught in the context” (Svalberg & Askham, ‘Forthcoming’).

The interviewer asks her to explain what she means by context and she replies: “Maybe a story or maybe a conversation – something like that”.
While both Emily and Mia refer to the context dependent nature of grammar in very positive terms, Sophie struggles with it. In the diary she comments:

The most difficult part to me is ‘modal meaning and function.’ Based on the context, some sentences seem to belong to double or multiple modal functions. And this part certainly confused me. (Diary 6)

In the interview, she mentions two main difficulties. One is the metalanguage, the other is interpreting grammar in context: “I need to – look the context – the story – and to judge that kind of context ... it’s really difficult for me.”

Although the diary entries showed a growing awareness of the importance of context, it was crucial to know whether they were able to apply this knowledge to text. Context was particularly crucial in the workshop on modality. Below, the students are analysing Roald Dahl’s ‘Lamb to the slaughter’³. Mary Malone has called police to investigate a supposed burglary (and murder of her husband). The text reads: Would she mind having a look around to see if anything was missing?

*Episode 1

‘Would She Mind’

1 Amelia: *would she mind having a look* - after past

2 Olivia: yeah - after past

3 Jessica: yeah - after past

4 Amelia: modal plus have - distance - polite?

5 Jack: it’s more important

6 Olivia: invitation – erm - I don’t know actually - *would she mind having a look around to see if anything was missing* - a request

7 Jessica: request - yeah

8 Olivia: it’s more of a request
9 Mia: could it be a suggestion?

10 Olivia: I think in the context of the story no - because it’s something like it’s a legal - the detectives doing their job - so she needs to have a look around to see if anything is missing in the context of the story

11 Amelia: ah - yes yes yes

12 Jack: yeah

13 Olivia: so they’re not really saying - it’s not really a request or something – because she doesn’t really have a choice - although they’re saying it in a polite way

14 Amelia: yes

15 Olivia: she doesn’t really have a choice in not doing it

16 Jack: yes

17 Amelia: yeah - you are right absolutely

The students start by determining the ‘after past’ (future in the past) time reference of the reported utterance (1-3). Amelia suggests that the wording is polite (4) and that would indicates (social) distance. At this point her main concern seems may be with the form (“modal plus have”), but several interpretations are suggested by others: “invitation” (6), “request” (6, 8) and “suggestion” (9). Olivia points out that they need to consider the context (10) and that as the speaker is a policeman on duty the protagonist (Mary Malone) is obliged to do as she is asked (13, 15). The episode closes with Jack’s and Amelia’s agreement with Olivia’s analysis. The students’ awareness of the importance of context is evident. It leads them to consider alternative interpretations and, although the episode ends without an agreed classificatory label, their collaborative efforts seem to have led to an understanding of the illocutionary force of the utterance in context.
The Phrase. Another concept frequently mentioned in the diaries, and referred to by the groups was the phrase. As discussed above, it is a ‘threshold concept’ and a key notion in the hierarchical structure of language (Meyer & Land, 2005; Orsini-Jones, 2008). In her diary, Lucy compares the course input to what she remembers from her previous grammar learning:

We can use the concept of phrase to analyse a sentence, which we don’t use in China. In China, we only consider that the word is a noun or not. The adjectives or other words which modify the noun are considered separately. (Diary 2)

Lucy seems to be saying that her previous understanding of sentences was that they were simple strings of words without constituent structure. Her discovery of the phrase has the potential to be transformative, if and when her understanding of it deepens.

The phrase was not a new concept to everyone. Sophie, an experienced teacher, writes: “Actually, I do not like ‘Phrase’ at all. I always cannot explain explicitly to my students what is phrase” (Diary 2). Although she knows that phrases exist, her understanding of the concept is not well developed. Prior to the course she was not familiar with the structure of phrases, for example that a phrase has a ‘head’. She feels, however, that she has benefitted from the workshop on Noun Phrases by acquiring an understanding of it: “Today I was happy, that is because I learned how to tell the Head in a Noun Phrase through discussing with my group members. In the past, I did not know that there is the head in a noun phrase” (Diary 2). Sophie’s understanding of the ‘phrase’ appears to be developing from a fairly meaningless ‘label’ to a concept including ‘head’ which can be applied to real text.

Although the third workshop is on a different topic (adjectives and adverbs), it gives Sophie the opportunity to apply her new knowledge about NPs. Unfortunately, she discovers gaps in her understanding: “My original concepts of noun phrase are not all correct which cause me to make such mistakes” (Diary 3). Sophie is still on a learning path in relation to phrases and the learning is gradual and non-linear.
The role of cognitive conflict in the collaborative environment.

It is tempting, in teaching, to remove what might seem like obstacles to learning, but there is abundant evidence in this study that ‘bumps in the road’ (cognitive conflict) can be facilitative. Like Lucy, and many L1 English speakers, Mia finds it confusing that a single noun can be a NP. After the workshop she reads the tutor’s feedback about this and reports that she ‘got the point’ (Diary 2). Although the phrase concept had already been explained in the lecture, the task created a cognitive conflict, highlighting her remaining lack of understanding and prompting her to seek out the answer. It would have been possible for the tutor to adopt a task design which minimized the likelihood of cognitive conflict but this may also have removed an affordance for new understanding through the resolution of conflict.

Cognitive conflict seemed to occur when there was either a lack of prior knowledge or where what was being taught conflicted with it. In some cases the students felt there was no equivalent term or concept in their L1. Inherent conceptual difficulty or ambiguity also had the potential to create conflict. In Table 2 below, these four types are illustrated with diary extracts, some of which have also been referred to above.

Jessica and Lucy refer to the novelty of some of the course content (Row 1 in Table 2). Sometimes it contradicts what they have been taught previously, for example that a reporting verb in the past must be followed by past tense (2, Jessica) or that sentences are just strings of words, without constituency (2, Lucy). There are frequent references in the diaries to the lack of equivalent terms or concepts in the L1 (3). Many languages do not make a distinction between ‘clause’ and ‘sentence’ for example. Even where L1 terms exist, the students may not be familiar with them (3, Lucy on subordinate clauses). The functional approach to grammar also differs from what most of the students have been exposed to. Lucy (3) refers to...
the distance – direct distinction, used on the course to explain the use of past forms for present time, and present forms for past time respectively.

Cognitive conflict may sometimes arise due to the inherent difficulty of some concepts (4). Chloe refers to two tense issues. One is the interweaving in a text of a past story time line and the narrator’s present time commentary. The other is the frequent ambiguity of present tense verbs, which may refer to present or future time (the ‘non-past’). Both seem to have required an intellectual effort from the diarist. Jessica comments on the similarity of some determiners with adjectives.
## TABLE 2

Conditions that Contributed to Cognitive Conflict, with Illustrative Diary Samples.

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Diary Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lack of prior knowledge</td>
<td><strong>Jessica</strong>: This seminar tells me I still have something that I don’t know though I have taught grammar for several years. (Diary 1)</td>
</tr>
<tr>
<td></td>
<td><strong>Jessica</strong>: I know some of classmates always couldn’t understand the lecture not because they have poor listening skills but they have never met those theories. (Diary 5)</td>
</tr>
<tr>
<td></td>
<td><strong>Lucy</strong>: Tense is always marked on the first verb of the VGr. In Chinese English Grammar teaching, this point of view is never mentioned. (Diary 4)</td>
</tr>
<tr>
<td>2. Conflict with prior knowledge/prior learning</td>
<td><strong>Jessica</strong>: after class, other classmates also asked me why ‘they told they have been to Rome’ is the right usage because they were taught ‘told’ should be followed by ‘had’. (Diary 5)</td>
</tr>
<tr>
<td></td>
<td><strong>Lucy</strong>: We can use the concept of phrase to analyse a sentence, which we don’t use in China. (Diary 2)</td>
</tr>
<tr>
<td>3. Absence of equivalent L1 term/concept</td>
<td><strong>Sophie</strong>: despite the fact that I have learnt grammar rules for over eight years, I still could not translate my grammar rules into English. (Diary 4)</td>
</tr>
<tr>
<td></td>
<td><strong>Amelia</strong>: I have learned some expressions of the grammar terms. I still haven’t match these terms with Chinese terms which I am much more familiar with. (Diary 3)</td>
</tr>
<tr>
<td></td>
<td><strong>Lucy</strong>: The clauses which is after a complement is called subordinate clauses. For example, &quot;she was happy that he had left&quot;. In Chinese English Grammar, there is no clear explanation this kind of clauses. (Diary 3)</td>
</tr>
<tr>
<td></td>
<td><strong>Lucy</strong>: In Chinese English Grammar teaching, there are only tenses. The concept of time is never used. Therefore, the concept of &quot;distance&quot; and &quot;direct&quot; doesn't exist. (Diary 6)</td>
</tr>
<tr>
<td>4. Inherent conceptual difficulty or ambiguity</td>
<td><strong>Chloe</strong>: Because it has story time and speaker time, we need to change the perspective of our mind which is hard. Sometimes, one verb may be at present or after present. Both are ok. This is also a problem. (Diary 5)</td>
</tr>
<tr>
<td></td>
<td><strong>Lucy</strong>: Do sentences include clauses? In what kind of circumstances a clause can be considered as sentences? And in what kind of circumstances cannot? (Diary 5)</td>
</tr>
<tr>
<td></td>
<td><strong>Jessica</strong>: I am not sure about the differences between determiner and adjective sometimes. (Diary 2)</td>
</tr>
</tbody>
</table>
Table 2 implies that conflict resolution, or attempts at resolution, may help teachers develop entirely new knowledge and revise prior knowledge. They may even become aware of gaps in their knowledge which had previously been hidden to them. The distinction, for example, between ‘sentence’ and ‘clause’ or between ‘determiner’ and ‘adjective’ may never have been important before, but has become relevant through their work on authentic texts.

While most instances of cognitive conflict lead to EWL, either individually or in the group, the students’ ways of dealing with it vary and negotiations which are successful for some in the group may be less so for others. In one long, discontinuous episode (39 turns; not shown here) dealing with the determiner versus adjective issue, the group negotiations appear to result in a resolution, except for one student who does not accept it and wishes to refer the question to the tutor. In this case the dissenting student (Megan) is highly verbal and so the tension is apparent. For quieter students, it can often be difficult to tell from the interaction data what the outcomes are.

In the episode below, initiated by Megan, the students are applying their understanding of phrases to a text. Megan puts a question to the group: what is the difference between an adjective phrase (AdjP) and a NP? This creates an affordance for the group, who have an opportunity to deepen their grasp of this threshold concept. Isabelle clarifies the modifying function of the AdjP in a NP (2) using the Russian Doll metaphor from the preceding lecture to explain that the former is embedded in the latter (4, 8). Megan checks her understanding (5, 7) and Isabelle reinforces the idea of embedding. Megan’s intonation indicates that she is not convinced. Finally Emily (11) reminds the group that the task does not include identification of NPs, and so this is a side issue as far as she is concerned.

**Episode 2**

*The Russian Doll Business*

1 Megan: what is the difference between adjective phrases and the noun
phrases? – can we say a noun phrase sometimes is also an adjective phrase as well?

2  Isabelle:  yeah – because the adjective modifies the noun

3  Megan:  yeah – yeah – so

4  Isabelle:  cause remember it’s that Russian doll business – so the adjective phrase is within the noun phrase

5  Megan:  so it could be adjective phrase and noun phrase

6  Isabelle:  adjective phrase within the noun phrase – yeah

7  Megan:  so – here thinner arms and legs- right?

8  Isabelle:  yeah – so it’s an adjective phrase within the noun phrase

9  Megan:  yeah?

11 Isabelle:  yeah

12 Emily: but if we answer – just underline the adjective phrases - we cannot analyse arms and legs

13 Isabelle:  no – just – you know – ok

In the above episode, the notion that one phrase can be embedded in another surfaces in the negotiations. Ten minutes later (episode below), the students have just been given a solution to the beginning of the text which contains the following: Sophy had a sharp idea of how different they were. Megan has identified a sharp idea as an adjective phrase (by underlining all of it). She notices that only sharp is underlined on the solution sheet (turn 2 below) and draws the correct conclusion, that the single word sharp is an AdjP (2). This seems to be a crucial moment of insight for Megan, who admits that she was wrong. Isabelle and Hanna back her up and clarify that sharp idea is a NP (3, 4; they mistakenly leave out the article). Emily struggles with the metalanguage, but manages to explain that sharp modifies idea (6). Megan seems satisfied (5-7). Like Lucy and Mia (discussed above) what Megan has been
struggling with this time is the concept of a one-word phrase. This episode has provided an affordance to further develop her understanding.

*Episode 3*

*The Russian Doll Business, Continued*

1. Isabelle: shall we finish – let’s finish finding the adjectives and then we’ll go on to the adverbials – shall we?

2. Megan: can – can we stop – here – I have a question – a sharp idea – you know maybe the teacher only underline *sharp* (Isabelle: Yeah) yeah – *sharp* is an adjective phrase – and there is only one word in this phrase (Isabelle: yeah) – we cannot underline a *sharp idea* – something like that – so I am wrong [Rise fall intonation]

3. Isabelle: yes – *sharp idea* is a noun phrase

4. Hanna: yes – *sharp idea* is a noun phrase

5. Megan: aaah

6. Emily: and do you – if you underline two of the words – *sharp* will be the determiner – or the modifier – oh no - *sharp* will be the modifier of *idea* (Isabelle: yeah) so we can only analyse *sharp* to be the adjective phrase

7. Megan: ok – ok – let’s go on

Through their collective EWL, the students in this group have created opportunities for themselves to deepen their understanding of an important threshold concept, the phrase, including the related notions of ‘head’ and ‘embedding’.

The majority of observable cognitive conflicts gave rise to negotiation. In cases where negotiation failed, remaining doubts often appeared as queries in the diaries. Lucy writes:

However I still have a lot of questions and difficulties below.
a. In the sentence ”I would like to help you.” What is the tense of “would like to help”? (Diary 6)

The answer matters sufficiently for her to record the question, indicating her willingness to engage with it. Although learning is by no means an inevitable outcome, formulating the query is an important step in creating the right conditions.

DISCUSSION

As mentioned above, there is a rich literature recommending an inquiry based, LA approach to language teacher education (Borg, 1994; Kumaravadivelu 2006, 2012; Wright, 2010; Wright & Bolitho, 1993). This study adds to it by providing an insight into teacher learning processes, more specifically changes in student teachers’ subject-matter cognitions, in such a learning environment.

The first question addressed by the study was what grammar and grammar related knowledge would emerge from the collaborative learning environment. Above I have highlighted in particular the gradual acquisition of a threshold concept and an understanding of the situated, user driven nature of grammar. The phrase was particularly cognitively challenging. In Orsini-Jones’ (2008) study, one of the students recounts how he had understood the lecture input on phrases but was then unable to apply it in his own sentence analysis. In the current study as well, the students’ reflections and negotiations revealed levels of understanding of the phrase. One might be paraphrased “’phrase’ is a label attached to some strings of words” (Sophie’s apparent starting point). Others seemed to be “one phrase can be inside another phrase”, “each phrase has a head” and “a phrase can consist of just one word”. In other words, the student teachers’ construction of knowledge through ‘doing’ and ‘reviewing’ (Wright, 2002) appeared to be gradual and multi-layered.
The study was also concerned with the role of cognitive conflict in the EWL process. Cognitive conflicts arose when the students’ knowledge was in some way insufficient to analyse the language to the group’s, or the individual’s, satisfaction. They triggered both collaborative and independent EWL and created affordances giving rise to a great deal of languaging (Swain, Brooks & Tocalli-Beller, 2002; Swain & Lapkin, 1998), which in turn helped scaffold the students’ knowledge construction. The interaction transcripts overall confirm that with very few exceptions, and apart from short breaks to consult books and notes, the student teachers were engaged in talk about language throughout the 50 minute workshops. Hence the groups expended a considerable amount of intellectual effort on resolving cognitive conflicts.

Cognitive conflict made the student teachers aware of gaps in their knowledge thereby focusing their attention on specific issues. Doubts and queries in the diaries, and efforts to resolve an issue in the group, sometimes repeatedly, showed that the resolution of cognitive conflicts mattered to them and was thereby to some extent affectively driven. Gaps in knowledge thus triggered cognitive conflict which helped focus the student teachers’ attention and, by the need it created to interact and verbalize, enhanced their willingness to engage.

Knowledge construction was easier to observe with the more vocal students (e.g, Isabelle and Megan). The diary entries, however, showed that quieter students also perceived and attempted to resolve cognitive conflicts that arose (e.g. Lucy, Mia and Emily). Whether or not they participated verbally, the languaging going on in the group created affordances with which they could engage mentally (see also Svalberg & Askham 2014; ‘Forthcoming’).

The issues investigated by this study are complex, and time and space as always limited. Difficult decisions had to be made. Although the diaries included celebrations of achievement and comments about frustration, anxiety and disappointment, these very important affective
factors in teacher development (Kubanyiova 2012) have not been addressed. A more complete picture could also have been gained by a more longitudinal perspective. It could have shown the effect (if any) of the participants’ enhanced KAG on their teaching, and whether they had been influenced by their experiences of the LA pedagogy. A case study by Burn’s and Knox (2005) found that two teachers who had been trained in SFG for academic writing purposes, and who valued it highly, were influenced in their pedagogic decisions by a host of institutional, pedagogical, personal and physical factors (Burns & Knox, 2005, p. 254; Kubanyiova, 2009) which sometime meant they could not implement it. It can take a teacher a long time to get into a position which allows them the freedom to teach in accordance with their convictions (Tsui, 2007), and some never do. The teacher’s own motivations and psychological needs also have an important part to play. Nevertheless, EWL leading to extended languaging, as shown above, would seem to provide good practice for explaining grammar which, according to Andrews (1999) and Tsang (2011), is a particularly challenging aspect of grammar teaching. It may serve to increase student teachers’ confidence in their KAG and thereby, according to Borg (2001, 2005) and others discussed above, have a decisive influence on their own teaching.

CONCLUSION

The study has shown that because of their complexity some types of grammar knowledge need to be constructed through active, sustained and often iterative EWL, and that the affordances created by cognitive conflict can facilitate and motivate this process. Although the study did not deal directly with learning to teach, I have argued that teachers’ knowledge, beliefs and attitudes about subject-matter, and the reflection and intellectual effort (and affect) that go into developing them, are as relevant to teaching as their PCK. How grammar is taught depends in part on what one believes grammar to be. Teachers who see grammar as
meaningful user choices in context can potentially draw on this to create a stimulating environment where their own learners engage with actual, purposeful meaning-making by real speakers/writers. Teachers who have themselves experienced inquiry based, collaborative EWL also have that pedagogical approach to draw on as they seek to meet their students’ learning needs.
ACKNOWLEDGMENTS

I am indebted to anonymous reviewers for their generous feedback and advice. Any remaining shortcomings are my own.

NOTES

1. Elsewhere, the same workshops as in this study but with earlier cohorts have been described as ‘cooperative’ due to the assignment of roles in the group work. In this cohort, however, the use of the roles varied across groups and also declined in later workshops.

2. EWL is a somewhat wider concept. A person can engage with language privately (perhaps their L1), and may do it for reasons other than language learning, for example for professional purposes or enjoyment. It does not necessarily involve verbalization.

3. The following conventions are used in the transcripts:
   - hyphen is used rather than punctuation to separate tone groups
   S unidentified student
   … deleted segment
   [*] short unintelligible segment (one or two words)
   [***] longer unintelligible segment
   - tone group boundary (impressionistic)
   [text] researcher’s clarification
   Italics verbatim repetition or reading out loud from task text

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43


