Thesis Title

Languaging and Learning Compared across EFL Course Delivery Modes

Author

Andrew Edward Sampson

Department

Linguistics and English Language

Faculty

Arts and Social Sciences

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ABSTRACT

The present study investigates the effects of delivery mode in adult EFL courses by comparing a) languaging, the "process of making meaning and shaping knowledge and experience through language" (Swain 2006: 98) and b) learning in three settings that are representative of common course delivery modes: i) face-to-face group classes; ii) one-to-one private tutoring sessions; and iii) individual online courses. Conducted within a Vygotskian (1978, 1987) sociocultural framework, data for this quasi-experimental study include recordings of pairwork in group classes and of tutor-learner interaction in one-to-one classes, and also think-alouds of individuals in online courses, thus drawing on Vygotsky's concept of inner speech and more recent work on self-scaffolding (Holton & Clark 2006; Knouzi, Swain, Lapkin, & Brooks 2009). The analysis is a mixed-methods approach of microgenetic qualitative analysis of learner talk and quantitative analysis of LRE number, focus, resolution and engagement, and includes questionnaire responses and scores from post-tests.

Findings indicate that languaging, evidenced in Language-Related Episodes (LREs), occurred in all three modes. While individuals in the online mode produced significantly fewer LREs than learner-learner dyads in group classes or learner-teacher dyads in one-to-one tuition, online individual numbers were similar to LREs initiated by each learner in learner-learner dyads, suggesting individuals identified language problems with a similar frequency as their group counterparts. Learner-learner dyads in group classes and one-to-one learner-teacher dyads produced similar numbers of LREs, but one-to-one episodes were more closely associated with learning than group or individual LREs, as observed in instances of microgenetic development and post-test responses. This may be because one-to-one episodes were better quality in terms of correct resolution and greater resolution by the learner, rather than the teacher. In one-to-one, resolutions followed scaffolding in the form of elicitations and prompts contingent on learners' tentative responses and teachers' perceptions of learners' current knowledge. Such teacher guidance towards learner resolution may have made outcomes more memorable for subsequent post-test recall.

Regarding LRE focus, dyads produced more grammar LREs than online individuals, which may relate to habitual grammar-focussed learning practices of face-to-face classrooms, whereas one-to-one dyads focussed more on spelling, suggesting

teachers sensed their role was to correct learners' written language. Regarding LRE resolution, proportions of correctly resolved episodes were similar between group and online individual modes, although the individual proportion was based on fewer LREs, suggesting individual learners did not initiate episodes they would be unable to resolve. The extent to which LREs were characterised by limited engagement (linguistic preferences were stated without further deliberation) or elaborate engagement (there was evidence of a cognitive self-regulation strategy) did not differ significantly between modes. In learner-learner interaction in group mode, the prominence of LREs characterised by limited engagement in one learner and elaborate engagement in the other suggested it was unnecessary for both participants to be elaborately engaged for episodes to be languaged and resolved.

Learners across modes averaged post-test scores of 70% to 80% of items resolved in agreement with LRE resolution in the task, suggesting associations between languaging and learning. However, group learners attempted significantly fewer test items relating to their LREs than individual or one-to-one learners, which suggests that forms languaged individually or with a tutor are more memorable.

Methodological implications of this research include the limitation of think aloud protocols in making microgenetic development visible to the researcher, while pedagogical recommendations include:

i) that learners in all modes be exposed to tasks that focus on form and provide languaging opportunities;

ii) that group learners be encouraged to seek gaps in their interlocutor's knowledge by asking the kinds of questions that teachers ask;

iii) that teachers in one-to-one contexts scaffold learners towards resolving LREs; and

iv) that online learners seek out an interlocutor – whether a teacher or another learner – the presence of which appears to be positively associated with LRE numbers, correct resolution and microgenetic development.

Directions for future research are discussed.

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CHAPTER I: INTRODUCTION

1.1   Introduction

The present research investigates the impact of delivery mode on learner interaction in adult English as a Foreign Language (EFL) courses and the significance for learning. Given the growth in demand for asynchronous online language learning platforms, its aim is to compare the learning processes that occur when learners do language tasks working alone, as is usually the case in asynchronous online EFL contexts, with those that occur in student-teacher dyads in private one-to-one tuition contexts, and also with student-student dyads in face-to-face group EFL classes[1].

Specifically, the study compares the quantity and quality of languaging, defined by Swain (2006: 98) as the "process of making meaning and shaping knowledge and experience through language" and rooted in a Vygotskian sociocultural framework in which language mediates cognition and learning, between the three modes. Languaging is observable in learners' language-related episodes (LREs), instances in which "students talk about the language they are producing, question their language use, or other- or self-correct" (Swain 1998: 70), and is claimed to positively impact on language learning (Gass & Mackey 2007; Kim & McDonough 2011; Gilabert & Barón 2013). LREs may differ in quality and quantity depending on whether tasks are performed in student-student dyads, as is often the case in face-to-face group EFL classes; in student-teacher dyads, as happens in private one-to-one tuition contexts; or by individual learners working alone, as occurs in asynchronous online EFL contexts. By analyzing and comparing performance on near-identical tasks between delivery modes, the research aims to observe similarities and differences in the languaging and learning that occurs in each.

In my role as a teacher and Director of Studies at a private sector language school in Spain that offers the same course content through the three modes of delivery, I am sometimes asked by learners which mode is "best" in terms of the

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[1] While face-to-face group classes typically contain a variety of interaction patterns (e.g. small group work, pairwork, individual work and open class interaction), the present quasi-experimental study zooms in on pairwork as representative of a typical group class interaction pattern that can be compared to the one-to-one and individual modes.

amount of English they will learn. Learners often have preconceived ideas about this: a common belief is that one-to-one tuition is more effective than group classes, and so greater learning gains can be made in shorter periods of time. This belief is so widespread, in fact, that many private sector language learners are prepared to pay several times the hourly group rate in order to receive one-to-one classes. Companies, for example, often invest in expensive one-to-one tuition for executives. Furthermore, learners in my local context often assume that online tuition should only be considered as a last resort, believing it is in some way inferior to face-to-face group or one-to-one tuition. This research therefore has the capacity to investigate and, potentially, challenge such preconceptions, inform learner decisions regarding course delivery mode, and also contribute to decisions regarding programme development and curricular designs. Given the growing interest in providing courses online, it also has broader social implications for improving access to language education for those who for geographical, financial or other reasons are unable to attend face-to-face lessons.

1.2 Contribution to Knowledge

The present study will contribute to knowledge because:

(a) While previous educational research comparing the effectiveness of different delivery modes for learning indicate that students in online conditions demonstrate slightly better educational outcomes than students learning the same material in face-to-face classrooms (Zhao 2002 and US Department of Education 2009 provide meta-analyses), very little of this research focusses on language education;

(b) very little research compares face-to-face with online language learning from a sociocultural perspective. However, increasing demand for access to asynchronous online language learning necessitates a closer examination of the thinking processes that occur when learners do tasks alone – such as those occurring in inner and private speech – in order for students, teachers and other stakeholders to make informed choices regarding delivery mode. The study fits with current research trajectories within sociocultural theory (SCT) regarding inner and private speech as mediational tools for learning (Stafford 2013; Hauser 2015) and self-scaffolding in individuals (Bickhard 2005; Holton & Clark 2006; Knouzi *et al* 2009), and contributes

to answering questions about how humans are capable of learning alone, without assistance from others;

(c) there is no research, to my knowledge, that compares educational outcomes of group language classes and one-to-one language tutoring contexts. By comparing these contexts, the present study will contribute to a more complete understanding of learning in one-to-one settings, and will also be of interest to cognitive SLA researchers investigating the effects of external feedback from tutors.

(d) only a small number of studies (Swain & Lapkin 1995 and Kim 2008 are two of the few) have examined LREs when learners perform tasks individually, with most studies interpreting LREs as collaborative events. However, Swain & Lapkin's (1995) conceptualisation of LREs, and the Vygotskian sociocultural framework (1978, 1987) in which they are rooted – specifically Vygotsky's notion of inner speech – allow for LREs to be events that can occur in individual learners' thinking. By examining this thinking and the LREs it contains, a better understanding can be reached regarding learning in the individual condition compared to pair-work, which has been much more extensively researched.

1.3   Theoretical Framework: An Introduction

The present research is informed by the work of Vygotsky and SCT. Vygotsky (1978, 1987) argued that higher mental processes (cognition) are mediated: humans use mediating physical artefacts and symbolic tools, such as numeracy, literacy and language to act upon the world, with language being one of the most important tools employed to mediate thinking, whether in social interaction or alone. Vygotsky's best-known research focussed on children's interactions with adults in non-language teaching contexts, where it was observed that higher cognitive functions first appear on the social, intermental plane, with learning constructed by novices in collaboration with experts, and later on the psychological, intramental plane. However, the application of SCT has since been extended to expert-novice relationships within teacher-student interactions (Wood, Bruner & Ross 1976), where teachers can scaffold, by providing finely-tuned support, students' development from their current to potential level within the Zone of Proximal Development (ZPD), defined as the

"distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers" (Vygotsky 1978: 86).

More recently (e.g. Donato 1994; Storch 2002, 2005) the concept of scaffolding has been applied to peer interaction. Because language learners have different expertise in different areas of language and language skills, peers in dyads can provide scaffolding to mediate each other's development.

SCT is also an appropriate framework for examining language as a mediational tool when learners perform tasks alone, given Vygotsky's concept of inner speech (1987), which is silent language used by individuals to mediate thinking: by using language to think through problems, adults reach new insights, solve problems and construct knowledge. This process involves self-scaffolding (Holton & Clark 2006, Knouzi *et al* 2009), a "form of internalized conversation in which the student interrogates their epistemic self" (Holton & Clark 2006: 128). While learners clearly cannot impart to themselves concepts they do not know, they can self-scaffold by, for example, breaking down problems into smaller parts, starting with simpler problems first, and making optimal use of available resources (Bickhard 2005).

Given its capacity to explain language use and learning in both expert-novice and individual settings, SCT is of key relevance to my study of course delivery modes, as it may help to explain how learning occurs when learners do tasks individually, with a teacher, or with a peer.

In summary, the present research uses sociocultural theory, in which language mediates cognition and learning, to compare learner interactional outcomes in three language education settings – face-to-face, one-to-one and online – and better understand the opportunities these provide for language development.

1.4 Definitions of Terms and Operationalisations

There follows a list of definitions and operationalisations of the key terminology employed in the present study.

1.4.1 Languaging. Swain's concept of languaging refers broadly to the "process of making meaning and shaping knowledge and experience through language" (2006: 98). Languaging is rooted in the Vygotskian view that language is not solely the expression of thought, but that "thought is restructured as it is transformed in speech. It is not expressed but completed in the word" (Vygotsky 1987: 150). Languaging is therefore "a vehicle through which thinking is articulated and transformed into an artifactual form" (Swain 2006: 98), and it is this process of "talking it through… to another, with another or with the self" (p. 98) that brings humans to understanding and learning. As an example of languaging, Swain highlights self-explaining, in which language is used to talk oneself through a complex problem and, potentially, reach new insights.

While some recent research (e.g. Suzuki 2012; Moradian, Miri & Hossein Nasab 2016) has examined languaging in written form, the present study follows most published research by interpreting languaging as existing in the spoken rather than the written word. It should also be noted that the term languaging was used in earlier research by Lado (1979) to refer to processes quite different from Swain's intention, but it is Swain's definition of languaging that is the most widely understood today, and the one adhered to in this thesis.

During Swain's research trajectory in the late 1990s and 2000s, her theoretical standpoint moved gradually towards languaging, in which language is used not only to convey meaning but also as an agent in meaning-making – that is, language is a cognitive tool – and away from the concept of output, which had conceptualised language as a conveyer of a fixed message already existing as thought, and which had been of key significance in her Output Hypothesis (1985). Her most recent work has been firmly within a framework of Vygotskian SCT, and has made little reference to the concept of output.

1.4.2 Language-Related Episodes. Languaging is observable in learners' language-related episodes (LREs), instances in which "students talk about the language they are producing, question their language use, or other- or self-correct" (Swain 1998: 70). LREs involve negotiation of form (Ellis 2000), the explicit discussion of linguistic forms tending to arise when learners temporarily attend to form as they complete a communicative task and attempt to convey meanings in the most accurate, appropriate and coherent way.

This conscious reflection on language may involve questioning the meaning of a word, its spelling, pronunciation or grammatical form, and / or correction of one's own or another's language use (Basterrechea & García Mayo 2013). LREs include a range of actions believed to be associated with language learning, such as noticing the gap between learner language and a target language feature (Gass & Mackey 2007; Gilabert & Barón 2013), formulating recasts and engaging in metalinguistic discussions (Kim & McDonough 2011; Gilabert & Barón 2013) and conducting hypothesis testing and self-repair (Gilabert & Barón 2013).

LREs are often interpreted as events that occur in collaborative dialogue with an interlocutor. Fortune (2013: 173), for example, claims "LREs are identifiable elements in *collaborative* task dialogue" (author's italics), and therefore chooses to exclude self-correction in his own definition of LREs. However, Swain asserts that languaging, the process in which LREs arise, is "made visible as learners *talk through with themselves or others* the meanings they have, and make sense of them" (2006: 95, my italics). Vygotsky considered inner and private speech tools that mediate learning, and this view of language use by individuals as a mediational tool lends support to the interpretation taken in the present study, which is that languaging may occur either collaboratively or individually.

1.4.3 Focus on Form. Ellis' interpretation of LREs as instances of negotiation of form (2000) underlines the fact that since their inception in the mid-1990s, LREs have been employed in a number of studies to operationalize instances of Focus on Form (FonF) in instructed language learning. FonF itself is defined as how

"focal attentional resources are allocated ... during an otherwise meaning-focused classroom lesson … an occasional shift of attention to linguistic code features – by the teacher and/or one or more students – triggered by perceived problems with comprehension or production" (Long & Robinson 1998: 23).

It is noteworthy that Long & Robinsons' requirement that the lesson be "otherwise-meaning focussed" is not always met in the research on languaging, in which some tasks are almost entirely form-focussed. This wider interpretation seems to be reflected in Spada's broader definition of FonF as "any pedagogical effort which is used to draw the learners' attention to language form either implicitly or explicitly" (1997: 73). It is this wider definition that is adhered to in this study.

1.4.4   Uptake and Repair. Within research on teacher-learner and learner-learner interaction, uptake refers to a student's utterance that immediately follows feedback from a tutor or peer, and which in some way responds to that feedback (Lyster & Ranta 1998). Uptake may or may not consist of repair, in which the student correctly reformulates the error focussed on in the feedback.

1.4.5. LRE Focus. LREs usually have a linguistic focus, such as lexis (Swain 1998, Storch 2007), grammar (Williams 2001, Storch 2007), or discourse (García Mayo 2002a, Fortune 2005). In studies that employ LREs as a unit of analysis, LREs are often first categorised by linguistic focus, before being categorised by some other characteristic, such as the correctness of resolution, depth of engagement or pattern of collaboration.

1.4.6. Engagement. While a great deal of research has centred on the focus and resolution of LREs, learners' level of engagement in LREs has, as observed by Storch (2008, 2010), attracted relatively little attention thus far. Engagement has been defined as "a state of heightened attention and involvement" (Philp & Duchesne 2016: 52) that "requires energy and effort" and "drives learning" (Christenson, Reschly & Wylie 2012: 817). Of the three types of engagement – behavioural, emotional and cognitive – described by Fredericks, Blumenfeld & Paris in their seminal 2004 paper, the type that is of key interest in the present study is cognitive engagement, which

"draws on the idea of investment; it incorporates thoughtfulness and willingness to exert the effort necessary to comprehend complex ideas and master difficult skills" (Fredericks *et al* 2004: 60).

Cognitive engagement is observable in learners' memorisation of forms (Fredericks *et al* 2004: 61), instances of flexibility in problem solving, a preference for hard work, and positive coping when failure comes (Connell & Wellborn 1991). It may also be observed in the use of metacognitive strategies to plan, monitor, and evaluate cognition when performing tasks (Pintrich & De Groot 1990). While some of these operationalisations of cognitive engagement closely mirror aspects of intrinsic motivation (Harter 1981), the present study adopts Reeve's (2012: 150) view that engagement relates to the learner's active involvement in a learning activity such as a task (lasting a few minutes) or a course (lasting a few weeks or months), which can be publically observed in behaviour, whereas motivation is a more private "force that energizes and directs behaviour." Understood thus, motivation may be a source of engagement in a given task.

In recent research focussing on languaging (e.g. Storch 2008; Edstrom 2015), two levels of engagement have been observed: limited engagement, in which learners state a linguistic preference or resolution without further deliberation; and elaborate engagement, in which learners seek and / or provide confirmation and explanations, and / or suggest alternative forms. In the present study, each participant's engagement is coded as one of these two types, limited or elaborate.

1.4.7 Learning, Microgenetic Development and Consolidation. This study adopts Vygotsky's view of learning as "a necessary and universal aspect of the process of developing culturally organized, specifically human psychological functions" (1978: 90). Specifically, language learning is the process through which language takes on new significance for learners, a process observable in languaging (Swain 2006). Languaging may therefore be considered an operationalization of learning: for Swain, learning is not a subsequent result of languaging, but rather the learning is in the languaging itself. Such a view of learning as a process of development, rather than a product, coincides with Vygotsky's (1978: 64) assertion of

the need to document the process of learning "in flight", by describing in analytical detail the activity over a very short period of time, such as the time required to complete task – that is, to conduct a microgenetic analysis of development. The present study conducts such a microgenetic analysis of transcribed learner interaction and individual think-aloud protocols.

The present research, however, is concerned not only with observing learning as a microgenetic process, but also learning in terms of product, that is learners' retention of and subsequent receptive and / or productive ability with the form focussed on. The term microgenetic development is therefore employed in the present study to refer specifically to the restructuring of knowledge that appears to take place within the short duration of an LRE or series of LREs, whereas learning is used to refer to the longer-term subsequent receptive understanding or productive use of forms topicalised in LREs, as observed in the post-test.

It should be noted that at higher levels, such as the upper-intermediate level observed in the present study, what often occurs is not the learning of a completely new grammatical or lexical form; rather, learning constitutes the consolidation of existing knowledge in the form of greater control of forms that have already been studied (Ellis 1997) or the extending of existing knowledge to new contexts (Swain & Lapkin 1995, 1998). Such consolidation is implicit in Swain's definition of language learning as the process of language taking on new significance (2006). In this study, the term learning also encompasses such consolidation.

In the present study the term acquisition will be avoided, except in the acronym SLA, given its connotations with the unconscious process of internalising rules through exposure to comprehensible input (Richards & Schmidt 2002), as opposed to learning associated with focus on form. Learning – which is the English translation of the term used in Vygotsky's writings – has greater connotations with the explicit study of rules and the monitoring of one's own performance, as often occurs in FL classrooms of the kind under investigation in this study.

1.4.8 Inner Speech and Private Speech. Inner speech is non-vocalised silent language used by adults to mediate cognition. Since inner speech cannot be directly observed, in a research context it must be vocalized by participants, for example using a think-aloud protocol. Such vocalised inner speech in a research

context may resemble private speech (Vygotsky 1987), which is audible self-directed talk that can occur when an adult is alone or in interaction (Hauser 2015), and which

> "surfaces … when a person faces a complex problem and tries to regain control of his or her cognitive activity by focussing on key features of the problem" (Swain 2013: 201).

Vocalised inner speech in a research context, however, differs from private speech, because the former is produced to comply with the researcher's demands. Private speech in naturalistic settings tends to be produced only when tasks are cognitively complex, and serves as a means of mediating thinking and remembering key information. Furthermore, in naturalistic inner and private speech, much of the "linguistic garb" is shed, leaving "pure meaning" (Lantolf & Thorne 2006: 72). As Vygotsky (1987: 88) observes, "thought can function without any word images", which implies that naturalistic inner speech may also be interpolated with non-verbal thoughts.

1.4.9 Think-Aloud Protocols, Stimulated Recall and Immediate Recall. The present study involves learners in the individual context performing think-aloud protocols as they complete tasks in order to verbalise inner speech. Think-aloud protocols, a subset of introspective methodology, are concurrent, online verbal reports produced by participants at the same time as they perform a task (Gass & Mackey 2000; Bowles 2010). They resemble Cohen's (1998) self-revelation procedures, and also what Shavelson, Webb & Burstein (1986) term talk-alouds. They differ from stimulated recalls, also referred to by Gass & Mackey (2000) as postprocess oral observation, and by Shavelson, Webb & Burstein (1986) as prompted interviews, in that stimulated recalls take place after participants have completed a task, and involve participants in viewing a video recording or hearing audio of themselves completing the task (or, in the case of a writing task, being exposed to the text produced) and describing what they were thinking while they completed the task.

Verbal reports containing explanations or justifications of what participants are thinking are referred to by Bowles (2010) as metacognitive verbal reports, and by Ericsson and Simon (1993) as Type 2 verbalisations. Verbalisations of thoughts *per se*, on the other hand, where learners are asked to say aloud exactly what they are

thinking without explanation or justification, are referred to as non-metacognitive (Bowles 2010) or Type 1 (Ericsson and Simon 1993) verbalisations.

Immediate recall (Gutiérrez 2013) is a think-aloud in which the researcher, if she or he believes the participant is not verbalising, interrupts to provide an auditory prompt such as a knock on the desk (Philp 2003) or a spoken request (Gutiérrez 2013) for a verbalisation.

For reasons discussed in Chapter III, the introspective methodology employed in the present study is think-alouds, that is, concurrent verbal reports produced without the presence of prompting or a recall support system.

1.4.10 Reactivity and Veridicality. In concurrent verbal reports the act of verbalising may constitute an additional task that alters the cognitive processes taking place to complete the main task. This potential for concurrent verbal reports to alter thought processes is referred to as reactivity (Ellis 2001; Jourdenais 2001). Since stimulated recalls, on the other hand, take place after the task has been completed, they are not subject to reactivity but rather have the potential to be affected by memory decay, an erosion over time of participants' ability to accurately verbalise what they were thinking. The threat of memory decay to the internal validity of the recall instrument is referred to as an issue of veridicality (Bowles 2010).

As discussed in Chapter III, the concept of reactivity is not entirely consistent with Vygotskian theories of language and thought, but is nevertheless useful for considering the relationship between learner verbalisations and individual task performance.

1.4.11 Tasks: Meaning-Focussed, Language-Focussed, Input-Providing and Output-Prompting. In the present study, both language-focussed and meaning-focussed tasks are employed. A language-focussed task is one that draws "learners' attention to a set of pre-determined language forms" (Storch 2013: 45), and is very similar to Ellis' (2009) focussed tasks, which are communicative tasks that provide practice in specific grammatical or lexical features. In a focussed task, target linguistic features are hidden; this marks a difference from a situational grammar exercise (for example drills, multiple choice, and cloze) in which the language point is

explicit (Ellis 2009). Similarly, language-focussed tasks reflect Willis' (2004) simulation activities, which contain language that looks realistic but focus on practice of particular forms.

In meaning-focussed tasks, on the other hand, attention to language forms is "incidental" (Storch 2013: 45), usually occurring only when a learner encounters a difficulty. Meaning-focussed tasks resemble Ellis' (2009) unfocussed tasks, which provide general communicative language practice without focussing on a specific linguistic feature, and also Willis' (2004) replication activities, which replicate real world communication insofar as language users decide what to communicate.

In the present study tasks are also categorised as input-providing (focusing on reading and listening), output-prompting (focusing on speaking and writing), or integrative (involving two or more skills) (Ellis 2009).

1.4.12 Tailor-Made Testing. In the present study reference is made to tailor-made testing. Tailor-made, or *a posteriori* test designs have been used in the research to trace learning from LREs and examine possible associations between languaging and learning of the forms focussed on. Tailor-made test items, developed after the LREs have occurred and which test the language items that actually arise in LREs rather than the forms seeded in the task, help overcome the difficulty of measuring learning when learners engage in LREs about forms not seeded in the task (Storch 2013).

1.5   Outline of the Thesis

The remainder of the thesis is organised as follows.

Chapter II begins with a review of the literature relating to the theoretical frameworks underpinning the present study. It goes on to review published research that has attempted to:

i)   compare online and face-to-face learning;
ii)   compare face-to-face and one-to-one learning;
iii)   identify features of teacher-learner and learner-learner interaction;

iv)   assess the effects of collaborative and individual conditions on linguistic product, LREs and leaning;

v)   examine the effects on languaging and learning of differences in dimensions of the expert-novice relationship;

vi)   investigate engagement in LREs;

vii)   consider the effects of task dimensions on LREs; and

viii)   study the potential for reactivity in verbal think-aloud protocols.

Chapter II concludes by formulating the research questions for the present study.

Chapter III describes the methodology of the present study by discussing:

i)   its quasi-experimental classroom method;

ii)   the two pilots that preceded the main study;

iii)   the participants;

iv)   course content and duration;

v)   steps taken to ensure ethical consent;

vi)   pre-task modelling;

vii)   the two tasks employed;

viii)   think-aloud protocols in the individual mode;

ix)   the post-test;

x)   the questionnaire;

xi)   interviews;

xii)   the methodology of data analysis; and

xiii)   the quantitative analytical methods employed.

Addressing each research question in turn, Chapter IV presents the results and statistical analyses for LRE numbers, focus, resolution, and engagement, in addition to test scores and questionnaire responses.

Chapter V provides a qualitative analysis of data from tasks and interviews and triangulates these with the quantitative data presented in Chapter IV.

Chapter VI provides a discussion of the findings and a consideration of the theoretical, methodological and pedagogical implications, potential limitations, and possible directions for future research.

CHAPTER II: LITERATURE REVIEW

This literature review is organised as follows. Firstly, there is a description of the theoretical frameworks that underpin the present study, specifically Vygotskian Sociocultural Theory (SCT) and the related concept of scaffolding, and Swain's Output Hypothesis. Secondly, there is a consideration of comparative analyses of online and face-to face learning, and of face-to-face and one-to-one learning. The review then discusses features that characterise learner-teacher and learner-learner interaction, before going on to define languaging and LREs and explore the relationship between these and learning. It then examines comparative effects of collaborative and individual conditions on language, LREs and learning, and discusses differences in LREs associated with varying dimensions of the expert-novice relationship. There then follows a discussion of studies observing engagement in LREs, and a review of the effects of task dimensions on LREs. The literature review concludes with the formulation of the research questions for the present study.

2.1   Theoretical Frameworks

2.1.1   Vygotskian Sociocultural Theory

2.1.1.1 Mediation, internalisation, spontaneous versus scientific concepts, and an interpretation of "sociocultural". The present study is theoretically informed primarily by the work of Vygotsky and SCT. Vygotsky (1978, 1987) argued that higher mental processes (cognition), which differ from lower mental processes in that they are socially rather than genetically acquired and are subject to intellectualisation, are mediated. Humans use mediating physical artefacts and symbolic tools such as numeracy, literacy and language to act upon the world, with language being one of the most important mediating artefacts of the mind. Mediation may consist of the use of silent or spoken or written language to complete and externalise thought in cognitively complex tasks. In this sense, language mediates cognition.

Mediation may also exist between two individuals, where language facilitates understanding and co-construction of knowledge. An everyday example of this kind of mediation suggested by Maley, Candlin & Koster (1995) is mediation between a client and a lawyer, where the lawyer can mediate between a client's version of

events, on the one hand, and the language and practices of the courtroom, on the other. Interpersonal mediation of this type occurs in situations typically characterised by difference, difficulty, or social distance (Baynham 1993), of which language classrooms – given the differences between teachers and students in terms of linguistic and life experiences (Gibbons 2003) – may be considered an example.

Vygotsky reasoned that mediation may be considered the process through which the spontaneous concepts that derive from everyday experience and direct contact with the world – such as the client's version of events, or a learner's ability to use, but not fully understand, a grammatical structure – are transformed into scientific concepts, or higher forms of thinking – such as the lawyer's case, or an understanding of an underlying grammatical system. Scientific concepts are therefore derivative of mediated collaboration. Whereas in the use of spontaneous concepts the system's function may not yet be fully understood, scientific concepts "restructure and raise spontaneous concepts to a higher level' (Vygotsky, 1987: 220) and are made evident by an awareness of structure.

Vygotsky's best-known research focussed on children's interactions with adults in non-language teaching contexts, where it was observed that higher cognitive functions appear twice: first on the social, intermental plane, with learning constructed by novices in collaboration with experts, and later on the psychological, intramental plane. Symbolic artefacts such as language become psychological artefacts through a process of internalisation, in which they shed their exclusive social nature (for use in communicative activity) and assume a bidirectional quality, that is, they function for social others and also for the self (Lantolf 2006).

In this study, I adopt Lantolf's (2006) understanding of *sociocultural* as relating specifically to the social constructivist view of learning proposed by Vygotsky (1978, 1987), in which mediation and internalization advance development. Vygotskian SCT, also known as cultural psychology or cultural-historical psychology (Cole 1996; Ratner 2002), is a lens through which dyadic interaction and individual learner talk can be analysed in order to identify development at the microgenetic level.

The term *sociocultural* is not meant here to refer to the wider social and cultural contextual factors that affect language learning, which constitutes an

alternative interpretation of SCT taken by Norton (2002) and Hall (1997). Such contextual factors, while undoubtedly influential on learning, are largely beyond the scope of this study, in which data collected from learners is limited to the language they produce during the tasks, and to the limited information relating to their background collected in the questionnaires and interviews. The quasi-experimental design, in which LREs and questionnaire responses are compared between the three modes, limits the data collected to that necessary for comparisons to be drawn regarding languaging and learning. The ethical consent provided by participants in this study also limits data collection to this specific focus, rather than allowing a wider inspection of learners' social and cultural backgrounds and contexts.

2.1.1.2 Scaffolding. The application of SCT has been extended beyond the child-adult interactions observed by Vygotsky to expert-novice relationships within teacher-student interactions (Wood *et al* 1976), where teachers can provide scaffolding – finely-tuned support – to aid students' development from their current to potential level. While scaffolding itself is not a Vygotskian concept, it is closely related to Vygotsky's Zone of Proximal Development (ZPD), the

> "distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers" (Vygotsky 1978: 86).

Scaffolding may be heuristic (Holton and Clarke 2006) or cooperative (Bickhard 1992), where the expert models or simplifies a task in order to help the novice complete it, or it may be conceptual (Holton and Clarke 2006) or informational (Bickhard 1992), where the expert imparts new information to the novice. Scaffolding has particular characteristics that distinguish it from support in more general terms, with scaffolding usually being characterised by:

i) contingency – the amount of support is dependent upon the teacher's ongoing assessment of the learner's current level;

ii) fading – the scaffolding is gradually withdrawn over time; and

iii) transfer of responsibility from the teacher to the learner – the learner may eventually complete the same task autonomously (van de Pol, Volman & Beishuizen 2010).

Since the mid-1990s the concept of scaffolding has been extended beyond student-teacher interaction and has been applied to peer interactions in language classrooms. Since language learners have different levels of expertise in different areas of language and language skills, peers in dyads can provide scaffolding to mediate each other's development (Donato 1994; Ohta 2000, 2001; Storch 2002, 2005). In one of the earliest studies to observe peer scaffolding, Donato (1994) performed a microgenetic analysis on protocol data produced by a triad of university French learners preparing a presentation. Instances of scaffolded help included collectively managing aspects of linguistic problems, identifying discrepancies between the language produced and what learners perceived to be the ideal solution, and reducing frustration by drawing on the group's collective resources. Donato's study is significant because at the time, the observation of linguistic change as a result of co-construction of knowledge in a joint linguistic activity was at odds with the prevailing SLA concepts of input, comprehensible input and output. Furthermore, scaffolding had previously been conceptually dependant on the presence of an expert teacher who could support the novice, whereas Donato argued that learners could concurrently be both experts and novices, and that individual expertise within groups could be pooled in order to benefit each individual's learning.

Similarly, Ohta (2001) identified instances of peer scaffolding in protocols produced by Japanese university learners, in which participation in LREs exposed learners to language input and feedback (positive or corrective), and focussed attention on language choices. Ohta claimed that even less proficient learners were able to scaffold the learning of more proficient peers, and that collectively, learners were able to produce language that was above the level of any one individual learner. These findings were supported by Storch's (2005) study of ESL learners performing a collaborative writing task, in which most dyads demonstrated collaborative scaffolding in the form of completing each other's ideas, proposing alternative suggestions, and providing each other with feedback.

2.1.1.3 Inner speech, private speech and self-scaffolding. SCT as a framework can be used to examine language as a mediational tool not only in collaboration but also when learners perform tasks alone. The Vygotskian concept of inner speech (1978, 1987) refers to silent language used by individuals to mediate thinking. By using language to think through problems, humans reach new insights, construct knowledge and, potentially, achieve independent problem solving. When problems are cognitively complex, this inner speech may surface as (sub)vocalised private speech, or "self-talk" (Lantolf 2006: 95), which occurs

> "when a person faces a complex problem and tries to regain control of his or her cognitive activity by focussing on key features of the problem" (Swain 2013: 201).

Private speech serves the functions of mediating and regulating internal cognitive processes, and of facilitating the internalization of mental functions (Lantolf 2006). In research contexts that require participants to vocalise inner speech in a think-aloud protocol, the speech produced may resemble private speech, but it must borne in mind that vocalised inner speech is being produced to comply with the researcher's demands, whereas private speech in naturalistic setting surfaces less frequently, and only when tasks are cognitively complex.

The use of silent or (sub)vocalized self-talk to facilitate cognitive regulation or internalisation has been referred to as "self-scaffolding" (Holton & Clark 2006; Knouzi et al 2009), a "form of internalized conversation in which the student interrogates their epistemic self" (Holton & Clark 2006: 128). While learners clearly cannot impart to themselves concepts they do not know – that is, they cannot provide themselves with conceptual (Holton and Clarke 2006) or informational (Bickhard 1992) scaffolding – they can self-scaffold heuristically by, for example, breaking down problems into smaller parts, starting with simpler problems first, and making optimal use of the resources they have available to them (Bickhard 2005). Likewise, they may employ focus features (Lantolf 2006), elements such as "now," "next," "let's see," "oh," or "OK," in private speech in order to regulate their thinking.

While self-scaffolding is a relatively new area of research within Applied Linguistics, it has been the focus of research in Cognitive Psychology since the 1980s.

In Chi, Bassok, Lewis, Reimann & Glaser (1989), for example, ten undergraduate learners' self-explanations of problems relating to Newtonian physical phenomena were observed using a think-aloud protocol. Learners were asked to overtly explain to themselves what they had understood after reading each line of a worked example. The authors highlighted functions of self-talk, such as self-explaining, where learners said something substantial about the subject matter in the example; monitoring, where learners reflected on their current state of comprehension; and, in the case of more able learners, asking themselves specific questions about what they had not understood, which may then be resolved through self-explanation in a process akin to the interrogation of the epistemic self described by Holton & Clark (2006). Chi *et al* proposed that the more self-explaining that occurred, the better learners' understanding of the material, a claim based on the assumption that longer protocols were a reflection of greater cognitive processing. However, there were no post-tests employed to assess whether such processing was associated with immediate or delayed demonstration of retention of the subject matter.

Within Applied Linguistics, functions of self-scaffolding in a French language classroom were identified by Knouzi *et al* (2009), who observed the self-scaffolding of a high languager (the participant who in a prior study had produced the most "languaging units") and a low languager (who had produced the fewest languaging units), as they self-explained concepts of the French voice system presented to them on cards. Some of the languaging was concept-bound, that is, "cognitively complex talk directed at understanding a conceptual unit" (p30) that consisted of paraphrasing, inferencing and analysing, whereas other examples were non-concept bound, consisting of self-assessment in which participants' monitored their understanding (for example by stating "I don't understand this part" or "this is not clear") and re-reading of all or part of the text written on the card. Whereas the low languager relied on paraphrasing, inferencing, self-assessment and rereading, the high languager engaged in all types of languaging, and also produced more accurate answers to post-test items. These results suggest that more languaging, and a greater variety in languaging functions employed, may be associated with more learning. Through their microgenetic analysis of think-aloud protocols, the authors observed that the high languager self-scaffolded by connecting together the new concepts presented to her, connecting new concepts with prior knowledge, and creating examples that helped her

connect spontaneous and scientific concepts. She also talked it through with herself when faced with conflicts, creating hypotheses that she later attempted to test. The low languager, on the other hand, left many cognitive conflicts unresolved. The results are of particular relevance to the online individual mode in the present study, as they provide evidence of scaffolding, problem solving and learning even when no external feedback is available from a teacher or peer.

Doctoral research conducted by Neguerela (2003) also highlighted functions of individual languaging and self-explaining, and made claims for its impact on learning. University Spanish L2 learners were assigned homework tasks that consisted of verbalising the target concepts of aspect, mood and tense in Spanish grammar. The verbalisation task was theoretically situated within a framework of Gal'perin's (1969, 1992) Systemic Theoretical Instruction (STI), which proposes the organisation of instruction into theoretical conceptual units, the use of charts and diagrams to represent target concepts, and learner verbalisations of concepts in order to promote understanding and internalisation. Learners were recorded self-explaining concepts on six occasions during a 16-week course. The author claimed that these self-explanations helped learners internalise concepts and more accurately produce written work relating to them. While the absence of a control group represented a limitation, and it is also difficult to separate the verbalisation from the other aspects of the STI approach, it appeared that the internalisation deriving from verbalisations of concepts aided the mediation of subsequent written communicative ability.

In sum, given the applications to languaging and learning in expert-novice, peer-to-peer and individual settings, SCT and scaffolding are of key relevance to my study of course delivery modes, as they account for learning that occurs when learners do tasks with a teacher, with a peer or individually.

2.1.2   The Output Hypothesis. The role of learner output in interaction in SLA was highlighted in Swain's (1985, 1993, 1995) research on English-speaking learners at Canadian French immersion schools. Swain noticed that while learners were communicatively competent, that is, they were able to convey and comprehend a variety of meanings, the accuracy of their linguistic output usually did not reach a level that could be considered "native-like". In other words, their linguistic resources were sufficient for the semantic language processing required for comprehension, but

they were less able to perform the syntactic processing necessary for accurate production.

Swain's Output Hypothesis therefore proposed the use of language tasks that would push learners' output by encouraging them to focus on more sophisticated language forms. Such pushed output serves three functions: firstly, to help learners notice the hole between their current level and the level required by the task (the noticing function), which coincides with Schmidt & Frota's (1986) concept of noticing the gap between the learner's current level and native-like forms; secondly, to allow learners to test out different linguistic hypotheses and check their appropriateness against feedback from a teacher or peer (the hypothesis testing function); and thirdly, to reflect and evaluate on their linguistic product (the metalinguistic function).

With regards to the present study, the hypothesis testing function, while available to group and one-to-one learners, is not available to students working alone. Given the evidence from a number of studies in the late 1990s and early 2000s that lent support to the Output Hypothesis by making claims for the use of collaborative form-focussed tasks as a means of providing learners with access to the three functions it described, this is potentially problematic for individual learners. In Storch's (1999) study of adult ESL learners performing cloze, text reconstruction and short composition tasks, student-student collaboration, when compared to individual performance, had a positive effect on the overall grammatical accuracy of the texts produced, particularly in terms of morphology. Pairs interacted, provided each other with feedback on their output, revised their work, and made corrections much more than individuals. The greater accuracy of texts produced collaboratively may have also related to the longer time spent on tasks in pairs, which was almost double that of individuals. Likewise, in Storch's (2005) study of learners producing a written description of a graphic prompt, pairs produced shorter but better texts than individuals in terms of task fulfilment, grammatical accuracy and complexity. Collaboration afforded opportunities to pool ideas and give each other feedback in ways not possible for individual learners.

The Output Hypothesis was also of key significance in Long's (1996) Interaction Hypothesis, which aimed to account for learning through exposure to L2

(input) and feedback from a peer or tutor on the correctness of utterances (interaction). Feedback may be explicit, such as corrections and metalinguistic explanations, or implicit, such as clarification requests, comprehension checks and confirmation checks – the "three C's of negotiation for meaning" (Gass & Mackey 2007).

However, since the late 1990s Swain's theoretical perspective has shifted away from her Output Hypothesis, in which learner output was conceptualised as a fixed message expressed using language that had already existed as thought, and towards the Vygotskian sociocultural perspective of language as a constructive agent of meaning making. In other words, her perspective shifted towards a view of language as both a conveyer of message and as a cognitive tool, and closer to the Vygotskian principal of "process analysis as opposed to object analysis" (Vygotsky 1978: 65). Recent language teaching research has tended to follow this shift, by drawing on SCT, or a combination of SCT and the Output Hypothesis, rather than on Swain's earlier work alone. For the purposes of the present study, the main limitation of both Long's Interaction Hypothesis and Swain's Output Hypothesis is their inability to account for learning that occurs when individuals work alone, in the way that a sociocultural perspective, with its contemplation of inner and private speech, is able to.

2.2 Online versus Face-to-Face Learning

There are relatively few studies that compare face-to-face (FTF) and asynchronous online language learning outcomes, partly because the myriad differences that can exist between the two modes can make comparability problematic (Blake 2011). However, evidence from the studies comparing learning outcomes between FTF learners and learners studying online, either asynchronously or with some element of synchronous computer-mediated communication (SCMC), indicates slightly more favourable results for students in online conditions. Furthermore, blended learning (a combination of online and FTF) may be even more effective than purely FTF or purely online instruction.

A meta-analysis (US Department of Education, 2009) of fifty comparative studies found an overall effect size of +0.20 favouring online learning compared to face-to-face, and +0.35 for blended learning. While the studies included in the meta-analysis related to learning in a range of subjects at school, undergraduate and

postgraduate level, and only one (Al-Jarf 2004) related to language instruction, the effectiveness of online learning did not appear to depend on subject content or age, which suggests findings may also be applicable to adult language education. However, the largest effect sizes were in studies where online instruction was collaborative or instructor–directed, rather than independent asynchronous online learning of the kind examined in the present study.

These findings support results from a previous synthesis (Zhao 2002) of studies comparing the effectiveness of computer-assisted language learning (CALL) and traditional instruction of the four language skills and lexis. Zhao concluded that CALL applications are as effective as, if not more effective than, traditional classroom instruction. The increased time CALL learners spent with L2 materials, compared to FTF classroom learners, may be responsible for the greater effectiveness observed (a claim also supported by Blake 2011 and US Department of Education 2009).

Further benefits of synchronous online learning compared to FTF were identified by Lai & Zhao (2006) and Gurzynski-Weiss & Baralt (2014). Their findings suggested that synchronous computer-mediated communication (SCMC), compared to FTF interaction, increased the time that learners had available to them to focus on language forms, and enabled learners to have forms more permanently available to them for consultation. This made it easier for learners to return to feedback on target structures provided by their interlocutor (a peer or a teacher). Lai & Zhao (2006) identified more negotiation of meaning in dyads interacting via SCMC, compared to FTF, although no differences in noticing of recasts or modified output were found. However, it should again be stressed that in these studies communication was synchronous, rather than the asynchronous learning under investigation in the present study, and there was no observation of LREs.

In one of the few studies to investigate the possible impact of delivery mode on languaging, Baralt (2014) observed the effects on LREs and learning of varying task complexity and delivery mode. In the FTF mode, positive associations were found between increasing task complexity and i) the production of LREs and ii) attempts at target structure use; in SCMC, however, not a single LRE was produced. One possible reason for this difference, suggested by results from a later study (Baralt, Gurzynski-Weiss & Kim 2016) is that cognitive engagement in SCMC may be lower

than in traditional FTF classrooms. This later study observed greater engagement, operationalised as attention to language forms, reflection on language, interactive support and positive attitudes, in the FTF classroom, especially when tasks were cognitively complex. In the SCMC mode, conversely, there was little engagement and little discussion, agreement or disagreement on language forms. Results from post-test questionnaires suggested that this may have related to learner preferences for individual online work over pair-work.

To summarise, while the above findings suggest that online learning may be associated with slightly more positive learning outcomes than purely FTF learning, such results are not unanimous and are rarely based on observations of language learners. Furthermore, there has been no comparison of FTF language classrooms with asynchronous learning in which learners complete tasks alone, with the focus so far being on interactive SCMC. Moreover, very little research has explored possible associations between delivery mode and languaging. The present study aims to fill these gaps in the literature by comparing from a sociocultural perspective group FTF with asynchronous individual online languaging and learning.

2.3   Group versus One-to-One Learning

As with online versus FTF language instruction, very little research has compared FTF group with FTF one-to-one language teaching. Furthermore, in the most recent studies comparing group and one-to-one tutoring for non-language subjects, "tutoring" is defined as additional classes that supplement group lessons, often for remedial purposes, rather than replace them, as is the case in the one-to-one mode in the present study. There is evidence (for example Mischo & Haag 2002; Obaidul Hamid, Sussex & Khan 2009) that students receiving additional remedial one-to-one tutoring demonstrate an improvement in school marks that is higher than students who receive no additional tutoring, but also that the effect of tutoring on educational outcomes depends on a range of variables, including tutors' qualifications and learners' objectives for contracting one-to-one classes (Bray 2006). However, participants in these studies were school-age, and considering the lack of comparison of stand-alone one-to-one lessons with face-to-face, there is limited applicability to the present research.

One early study (Bloom 1984) in a non-linguistic context attempted to compare learning gains made in stand-alone tuition contexts with group classes. Students of Probability and Cartography were randomly assigned to one of three methods of instruction:

i) conventional group classes consisting of one teacher and around 30 students, and in which tests were given periodically to determine learning;

ii) mastery classes, the same as conventional classes but with corrective procedures and formative tests; and

iii) tutoring, the same as mastery but in one-to-one, one-to-two or one-to-three contexts.

The final achievement measures of students in the tutoring context were around two standard deviations above the mastery students – a result Bloom refers to as the "2 Sigma effect" – and the mastery students were around one standard deviation above the conventional students. Bloom claimed that no other variable has as much impact on learning as the mode of delivery, as no other variable or combination of variables could produce achievement measures that were two standard deviation measures above those of a control group. It is noteworthy that the amount of total class time spent on-task changed according to the delivery mode – 65% under conventional instruction, 75% in mastery and over 90% in tutoring – and this may have impacted on learning gains. The findings need to be interpreted with caution, however, as there were a number of limitations: as delivery mode was not the only independent variable under investigation, differences in learning gains may have been attributable to other variables, such as different testing procedures. Furthermore, there was no profile of the students (for example ages), indication of how many students participated or details regarding the content of the tests.

In the university undergraduate contexts where much of the adult education research occurs, one-to-one language tuition is much less common than group classes and there may be limited interest in researching the one-to-one context, and few intact one-to-one classrooms to investigate. In private sector language schools such as the site of the present research, however, one-to-one tuition is widespread, and they

therefore appear ideally placed for ecologically valid research into one-to-one teaching.

2.4   Features of Teacher-Learner Interaction

Given the lack of studies comparing group and one-to-one language instruction, it is relevant at this point to consider the research into the nature of teacher-student classroom interaction, in language teaching and beyond, in comparison with peer interaction. This section will explore this area by considering the IRF framework and its variations, "Socratic" tutoring, teacher talk leading to negotiation of form, and the effects of perceptions of learner and teacher roles.

2.4.1 IRF and Scaffolding. Although few SCT-oriented studies have investigated teacher-learner interaction, research from other theoretical standpoints indicates that it has specific structural qualities that differentiate it from learner-learner talk. The triadic IRF (Initiation, Response, Feedback) sequence of interaction identified by Sinclair & Coulthard (1975) in their sociolinguistic discourse analysis of teacher-led group lessons, also referred to as IRE (Initiation, Response, Evaluation) by Mehan (1979), is perhaps the best known teacher-student interactional sequence. It comprises the initiation of interaction by a teacher (often by asking question), a response by a learner (usually with an answer to the teacher's question), and feedback provided by the teacher, usually in the form of confirmation or correction of the answer provided. While this sequence was first observed in group lessons, evidence of its presence in one-to-one instruction was also provided by Graesser, Person and Magliano (1995). In addition to the first three steps in which (1) the tutor asks a question, (2) the student offers an answer and (3) affirmative or negative feedback is provided by the tutor, Graesser *et al* proposed a one-to-one tutoring frame in which two more steps, which they claimed to be unique to the tutoring context, are added: (4) the tutor engages in a series of exchanges with the learner, usually of between five and ten turns, in order to scaffold his or her understanding (such scaffolding may consist of breaking down the task into smaller parts, doing part of the task for the student, and / or reminding the student of an important aspect of the task); and (5) the tutor gauges the learner's understanding of the answer by inviting the learner to evaluate his or her own level of comprehension.

There is evidence, however, that contingent scaffolding of this kind is not unique to one-to-one tutoring, and also occurs in the feedback stage of IRF sequences in group lessons. In her SCT-oriented study observing student-teacher interaction in a language classroom, Gibbons (2003) adopted an interpretative ethnographic approach to analyse discourse in CLIL (Content and Language Integrated Learning) group science lessons for eight and nine year olds at an Australian ESL school in which English was the medium of instruction. While observing that the IRF sequence was in effect in these classrooms, Gibbons also noticed that in their interactions with students, teachers used language to mediate between the students' current language level and everyday understanding of science, on the one hand, and specific scientific language and specialist understanding of scientific concepts, on the other. Sometimes this mediation consisted of recasts, prompts to encourage learners to repair their utterances and use a more academic register, or the correction of utterances that were factually incorrect – in other words, precise and contingent scaffolding to help learners move beyond their current level of ability. Evidence was also found of teachers eliciting additional information instead of providing feedback in the third part of the IRF exchange, which Gibbons claimed encouraged learners to take greater responsibility for improving the comprehensibility of their response.

Gibbon's study not only provided evidence of teachers in group contexts as mediators between Vygotskian spontaneous and scientific concepts, but also demonstrated that steps (4) and (5) of Graesser *et al*'s (1995) sequence are not limited to one-to-one contexts but also occur in group leaning, either in open class or while monitoring individual, pair or group work. However, it still stands to reason that in a one-to-one context the individual learner will receive more instances of scaffolding from a teacher than in a group, where the teacher's attention is divided. If a teacher's scaffolding and encouragement of self-evaluation promote learning, and if these occur more often in one-to-one than group contexts, then logically there will be more learning opportunities in one-to-one contexts – unless, of course, peer scaffolding of the sort observed by Donato (1994) and Ohta (2000, 2001) is able to support learner development to a similar extent as scaffolding provided by the teacher.

2.4.2 "Socratic" Tutoring. Evidence from studies in cognitive psychology (e.g. Chi, Siler, Jeong, Yamauchi & Hausmann 2001) indicates that the presence of

the IRF sequence in one-to-one contexts may not in fact be more conducive to learning than other interactional sequences. Learning may occur just as effectively regardless of whether tutors assume a traditional didactic role, for example by providing explanations and feedback, or a more interactive role, for example by only prompting using questions such as "what's going on here" and "what do you think" – the kinds of questions that might also commonly occur in student-student dialogue. In Chi *et al* (2001), when tutors of eighth-grade biology students refrained from providing explanations and feedback, but rather adopted a style of tutoring the authors referred to as "interactive" or "Socratic" (p. 512), learners engaged in a greater number of scaffolding episodes, and engaged in these more deeply. Learners also took more control of their own learning by reading more of the text, a behaviour to which the authors attribute the greater learning that takes place, as measured by pre- and post-tests. It seems that when teachers let go of the traditional didactic teacher role and rather adopted the role of a questioning peer, learners' assumed more responsibility for their own learning, and learning outcomes were improved.

While the primary-age non-linguistic context limits applicability to the present study, these findings suggest that peer-peer interaction has the potential to benefit learners as much as learner-teacher talk, provided it consists of interrogative input that encourages interlocutors to engage in and reflect on the task at hand.

2.4.3 Teacher Talk and Negotiation of Form. Specific structural qualities of teacher talk in group classes have been identified by researchers working from a psycholinguistic interactionist perspective, such as Lyster (1998). In his analysis of French school-age immersion classroom discourse, teacher talk was found to contain elicitation, metalinguistic feedback, clarification requests and repetition – all of which the author claims led to student-generated repair and "negotiation of form", a process defined as the "provision of corrective feedback that encourages self-repair involving accuracy and precision" (Lyster & Ranta 1997: 42). However, teacher feedback consisted overwhelmingly of recasts, which the author claims were less conducive to student repair and negotiation of form than the other kinds of feedback observed. Again, there was no comparison between teacher- and peer-feedback, but studies on peer interaction have demonstrated that students in dyads are also able to successfully engage in negotiation of form and self-repair (Gass & Mackey 2007; Kim &

McDonough 2011; Gilabert & Barón 2013). Peer interaction is particularly well-suited to self-correction and the emergence of new forms, as it provides a safe context for experimentation with language (Philp, Adams & Iwashita 2014). The question can therefore be raised of how effective such teacher feedback is in comparison to that provided by a peer.

Furthermore, it has been claimed that teacher-initiated focus on form within LREs may be less facilitative of learning that learner-initiated FonF, as learner-initiated FonF i) indicates a genuine gap between the learners' knowledge and the target language, and ii) demonstrates that the learner wishes to address this gap her or himself, which may in turn suggest greater motivation and learner autonomy than teacher-initiated FonF (Baralt *et al* 2016). While Baralt notes there is limited empirical research to support this claim, findings from Williams (2001) suggest that no matter whether the LRE began with feedback on an error by the teacher or with a learner's request for assistance, the learner was equally likely to remember the form.

2.4.4 Perception of Roles. An important way in which teacher-student and student-student interaction may differ is in students' and teachers' perception of their roles, which has been described as asymmetrical (Chi *et al* 2001): teachers and learners often perceive the teacher's role to be that of conveying meanings in a comprehensible way, to check learners have understood, and to provide necessary scaffolding, whereas the student's role is often expected to be to display signs of comprehension, to ask questions, and to do the tasks set. Student-student interaction, conversely, has a greater degree of symmetricity: there may be greater co-construction of shared knowledge in which each participant has an equal role. These teacher and student roles have been described as complimentary, with the teacher assuming the role of language expert, and peers in dyads assuming the roles of fellow learners with whom to test and develop language (Philp *et al* 2014). The qualitative analysis of teacher-learner and learner-learner interaction in the present study will help shed light on the degree to which these differences in roles might impact on languaging and learning.

To summarise, while research into teacher talk, tutoring styles and learners' perceptions of roles has helped identify important characteristics of classroom

interaction, the differences between one-to-one tutoring and peer interaction have not been fully explored. Such as an exploration is one of the key aims of the present study.

This literature review now turns its attention to the main unit of analysis employed in the present research, LREs.

2.5   Student-Student Interaction: LREs and Learning

LREs, in which "students talk about the language they are producing, question their language use, or other- or self-correct" (Swain 1998: 70), have been of interest in language teaching research since they were conceptualised in the mid-1990s by Swain (1995) and Swain & Lapkin (1995). In LREs, "learners consciously reflect on their own language", and may "question the meaning of a word, the correctness of a word's spelling, the pronunciation of a word or a grammatical form", as well as self- or other-correct (Basterrechea & García Mayo 2013: 25-26). LREs encompass a range of behaviours associated with language learning, such as noticing the gap between students' own (or their partner's) interlanguage and a target language feature (Gass & Mackey 2007; Gilabert & Barón 2013), formulating recasts and participating in metalinguistic discussions (Kim & McDonough 2011; Gilabert & Barón 2013) and engaging in hypothesis testing and self-repair (Gilabert & Barón 2013). LREs have been used as a unit of analysis to explore a number of key dimensions in language development, including comparing the effects of student groupings (Donato 1994; Storch 2007; Kim 2008; Basterrechea & García Mayo 2013), proficiency levels (Leeser 2004; Watanabe & Swain 2007; Kim & McDonough 2008) and task designs (Storch 1998) on interaction, collaboration, output and learning.

Positive claims have been made for associations between LREs and learning, based on participants' ability to correctly resolve items on post-tests. The "collective scaffolding" evident in collaborative LREs in Donato's (1994) study, for example, is claimed to have positively affected learners' ability to use the forms in subsequent production. 75% of the structures that had been peer-scaffolded by triads in the preparation stage for a presentation were used correctly in the presentation (considered the post-test), suggesting that LREs may have been conducive to learning. In a separate study conducted by LaPierre (1994), learners who correctly resolved

LREs in a dictogloss task also replied correctly to 79% of the corresponding dyad-specific tests items administered one week later. Tellingly, 70% of the responses to test items relating to the 21 LREs that had been incorrectly resolved were also incorrect, but matched the incorrect resolutions in the LREs. Swain (1998) claims this constitutes evidence that students tend to retain collaboratively constructed knowledge, even when this knowledge is incorrect.

Similarly, a dyad of grade 8 immersion students of French who correctly resolved LREs during an information gap (jigsaw) task in Swain & Lapkin's (1998) study also responded correctly to most of the corresponding items on the tailor-made post-test, which consisted of items from a pre-test (which was itself based on language students had discussed while performing the same task in a pilot), plus new tailor-made items relating to LREs produced in dialogue during the jigsaw. An extensive qualitative analysis of LREs elucidated processes such as the generation and testing of hypotheses, application of rules and extension of knowledge to new contexts.

An association between LREs and accurate performance on receptive test items was also found by Williams (2001). Since receptive items such as those employed in Swain & Lapkin (1998) may not indicate productive ability, Williams also collected data on spontaneous spoken production of lexical items in subsequent class performance. While spontaneous use was quite low, Williams notes the methodological difficulty of a researcher being "at the right place at the right time" (2001: 336) to detect production. The issue of longer-term productive ability is one that a longitudinal study, recording learner language over a longer period than the duration of the present study, could aim to explore.

2.6 Pair versus Individual Conditions: Effects on Linguistic Product and Learning

One of the key aims of the present research is to explore the extent to which performing tasks individually online, compared to collaborative task performance face-to-face, affects the occurrence of LREs and the learning of forms focussed on. For reasons discussed below, very few studies have compared collaborative with individual task performance in terms of the LREs produced. However, several studies have compared the impact of the two conditions on the accuracy, complexity and

fluency of the written and/or spoken output. Findings generally suggest beneficial effects of collaboration, compared to individual task completion.

A comparison of collaborative and individual text reconstruction (dictogloss) was conducted by Basterrechea & García Mayo (2013) in two contexts, CLIL (Content and Language Integrated Learning) and EFL. In EFL they found little difference between pairs and individuals in the accuracy the 3rd person *-s* morpheme, but in CLIL they found a significant difference in favour of collaborative reconstruction. This difference was attributed to the more collaborative methodology of CLIL classrooms and learners' greater familiarity with collaborative working. In a separate study, Wigglesworth & Storch (2009) found that pairs who collaboratively wrote an argumentative essay produced significantly more accurate T-units and error-free clauses than learners writing the same essay alone, and that pairs' LREs contained evidence of collective scaffolding, which may have contributed to the greater accuracy.

Learner collaboration has not always been found to benefit learning, however. Nassaji & Tian (2010) found that although pairs demonstrated greater accuracy than individuals when completing cloze and text editing tasks seeded with phrasal verbs, no significant differences were found in learning gains measured by post-tests. Although dyads interacted, interactions were brief and limited, consisting largely of repeating or acknowledging each other's output, which led the authors to suggest that learners may have limited ability to solve problems collaboratively unless specific training is provided. Similarly, the products of a text editing task performed by pairs and individuals were compared by Storch (2007), who suggested that while pairs appeared to engage actively in and correctly resolve LREs, there were no significant differences between the two conditions in grammatical accuracy and lexical appropriacy. However, Storch's qualitative analysis of collaborative LREs provided evidence of moves such as seeking and receiving confirmation and providing explicit and implicit negative feedback, which she claims may have led to learning. Likewise, Kuiken & Vedder (2002) compared individuals' and pairs' accuracy of use of the passive voice in two dictogloss tasks, and found no significant differences during the text reconstruction stage or in the immediate and delayed post-tests. However, as in Storch (2007), the qualitative analysis of learner interaction revealed that noticing as a

result of interaction led to the repeated completion of modified input, which, within Skehan's (1998) Information Processing Model, is claimed to facilitate learning.

It seems, then, that collaboration tends to positively impact on languaging, and may be associated with more learning than individual task performance.

2.7   Different Participant Numbers in Groups: Effects on LREs and Learning

Within the research on collaborative languaging, a number of studies have examined from a sociocultural perspective the effects of numbers of group participants on LREs and learning. The effect of student groupings (groups of four, dyads or individual) on the accuracy of written texts, and also on the frequency and nature of collaborative LREs when adult learners of Spanish as a Foreign Language performed a story writing task based on picture prompts, was explored by Fernández Dobao (2012a). Greater attention to form occurred in small groups, compared to dyads doing the same task, with more LREs and greater LRE resolution: "more learners meant more resources and subsequently more chances to reach a correct solution to the problems encountered" (p. 55). As in most studies, however, no attempt was made to examine the number or nature of LREs produced by learners in the individual condition.

In a subsequent study (Fernández Dobao 2014), further evidence was provided that increasing the number of participants within groups increases the number of LREs and the number of opportunities for learning. Groups of four produced more LREs, and correctly resolved a greater number of LREs, than pairs completing the same collaborative writing task. While retention rates for each lexical item discussed, as measured by post-tests, were similar between pairs and groups, the increased number and resolution of LREs in groups suggested that group collaboration had led to more learning than pair-work. While it was observed that LREs in groups were often resolved by only two or three more active group members, with the less active participants simply observing, this did not appear to have a significant effect on the retention of knowledge collaboratively constructed in the LREs, which suggests that that learning was not necessarily dependent on how active participants were in the LRE. These findings are supported by Lasito & Storch (2013), who found that while adolescent Indonesian learners performing a jigsaw task in triads produced fewer

LREs than pairs doing a similar task, learners in triads were better able to resolve the LREs (with a 90% correct resolution rate) than pairs, who left 21% of LREs unresolved. Again, more participants seemed to mean more linguistic resources that could be pooled in order to resolve LREs. However, it should be noted that no attempt was made to measure learning, and, as noted by the authors, the tasks performed by pairs and groups were not identical, which limits their comparability.

Not all research findings indicate that increasing the number of learners is beneficial. Edstrom (2015) found that when seven triads of university learners of Spanish were drafting a script for a subsequent oral presentation, deliberations involving only two of the learners in the triad led to a higher LRE correct resolution rate (75%) than deliberations involving all three learners (71%). While this suggests that increasing the number of participants in an LRE may not necessarily lead to more accurate resolution, it should be observed that the difference is relatively small, particularly given the small sample size (21 learners).

The research on the effects of participant numbers, then, while inconclusive, tends to suggest that more participants mean more opportunities for languaging and learning, which may be interpreted as a disadvantage for individual online learners.

2.8   Pair versus Individual Conditions: Effects on LREs and Learning

While several of the studies reviewed above compare individual with dyadic and / or group conditions in order to shed light on how individual and collaborative performance may differ in terms of linguistic product, they do not demonstrate how the processes involved in LREs differed between the two contexts, since no LREs were observed in individual learners. Few studies have compared the number and quality of LREs produced by dyads or groups with those of learners working individually, which is a key aim of the present research. The methodological challenge of attempting to observe LREs in the individual condition, compared with the relative ease of observing LREs in dialogue, may be the principal reason for this; also, the use of think-aloud protocols within SCT is theoretically problematic, as discussed in Chapter III: Methodology of the present thesis. Furthermore, LREs are often interpreted as events that occur in collaborative dialogue with an interlocutor.

Fortune (2013: 173), for example, claims that "LREs are identifiable elements in *collaborative* task dialogue" (author's italics), and therefore chooses to exclude self-correction in the operationalisation of LREs in his study. However, Swain asserts that languaging, the process in which LREs arise, is "made visible as learners *talk through with themselves or others* the meanings they have, and make sense of them" (2006: 95, my italics).

Vygotsky emphasised inner and private speech as tools that mediate learning, and this use of language by individuals as a mediational tool is evident in one of the earliest studies to employ LREs as a unit of analysis. In Swain & Lapkin (1995), transcripts of think-aloud protocols produced by 18 Canadian immersion students of French as they wrote a composition were analysed for LREs, defined as

> "any segment of the protocol in which a learner either spoke about a language problem he / she encountered while writing and solved it either correctly … or incorrectly … or simply solved it (again, either correctly or incorrectly) without having explicitly identified it as a problem" (p. 378)

The researchers identified a total of 190 LREs, observing that learners languaged even though no external feedback was available from a peer or teacher.

The only published study, as far as I am aware, that has attempted to compare collaborative LREs identified in transcriptions of learner talk with individual LREs identified in think-aloud protocols is Kim (2008). Her findings suggest that while Korean as a Second Language (KSL) learner dyads completing a dictogloss were able to pool their knowledge and correctly resolve most LREs, individual learners tended to leave LREs unresolved, since they had no resources to draw on other than their own knowledge, the gap in which had given rise to the LRE in the first place. Pairs showed significantly higher gain scores than individuals on immediate and delayed post-tests, which suggests learning advantages for collaborative over individual task performance. However, post-tests were partially self-reports of learners' knowledge of listed words, and it is plausible that participants over- or under-reported. Another limitation, observed by the author, is that despite three think-aloud training sessions, individuals were reluctant to vocalise, leading Kim to suggest that having learners think aloud in L2 had created an additional cognitive demand not experienced by dyads.

While Williams (2001) did not observe LREs in the individual condition, her observations of LRE resolutions in dyads suggest learning benefits of learners resolving their own LREs (as they have to in the individual condition in the present study). In her study, when learners correctly supplied the answers to their own LREs, they had a near-perfect performance in the post-test, suggesting that solving one's own problems may be more memorable than having them solved by someone else, whether that be a teacher or another student.

In summary, findings from research comparing collaborative with individual performance suggest that learners who collaborate on tasks pool their linguistic resources to engage in and resolve LREs, and this collaboration appears beneficial for the greater accuracy of linguistic product, and possibly also for learning, compared to individual learners. There is a gap in the literature, however, in terms of studies that observe the nature and number of LREs and associated learning when learners perform tasks alone, as in the case of asynchronous online language learners.

2.9 Dimensions of the Expert-Novice Relationship: Effects on LREs and Learning

In the absence of studies directly addressing differences between student-student and student-teacher languaging discussed in Section 2.3, it is relevant to consider findings from studies investigating other dimensions of expert-novice relationships, such as dyads of interlocutors of different proficiency levels, or pairs of native (NS) and non-native (NNS) speakers[2].

This sub-section first examines the effects of pairing NS with NNS interlocutors, before discussing the effects of pairing learners of similar and different proficiency levels. It goes on to explore the role of interaction patterns, that is, the extent to which interlocutors behave in a way that is collaborative, dominant, passive etc. It ends with a discussion of learners' perceptions of their interlocutor's proficiency, rather than the actual level of proficiency, and the role of such perceptions in languaging and learning in pair-work.

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[2] Given the evidence that the NS - NNS distinction is problematic and may represent a false dichotomy (Rampton 1990; Phillipson 1992; Kershaw 1994), the terms NS and NNS are avoided in the present thesis, except in reference to published research in which they are employed.

2.9.1 Effects of Pairing NS with NNS Speakers. In her investigation into the effect of the presence of an NS interlocutor (not a teacher) on lexical LREs when NS-NNS dyads performed a spot-the difference picture description task, Fernández Dobao (2012b) found LREs produced by NS-NNS dyads to be more frequent, and more often successfully resolved, with a 92% correct resolution rate, than those of NNS-NNS dyads, who resolved 81% correctly. NSs' higher level of linguistic expertise meant they could provide more frequent assistance to the NNS and enhance the NNS's use and knowledge of the language, whereas NNS-NNS dyads maintained focus on the communicative demands of the task and prioritised meaningful communication over FonF. An alternative interpretation of these results is that NS participants construed the purpose of the task to be to teach the forms rather than perform the task meaningfully, hence the greater attention to form in NS-NNS dyads.

2.9.2 Effects of Different Proficiency Levels within Learner Dyads. In terms of proficiency levels within NNS dyads, there is evidence to support pairing interlocutors of different levels. Significantly more lexical LREs, and more correctly resolved LREs, were found by Kim & McDonough (2008) when intermediate adult KSL learners collaborated with an advanced interlocutor, compared to when they collaborated with another intermediate interlocutor. No significant differences in frequencies of grammatical LREs were found, however, and post-task questionnaires revealed interaction with more advanced interlocutors was assessed by intermediate learners as most useful in developing listening comprehension, rather than grammatical competence. Learning associated with LREs was not measured, but learners' perceptions of the utility of interactions with higher proficiency peers for skills rather than language practice is noteworthy, as it may also apply to student-teacher interactions in the present study.

Watanabe & Swain (2007, 2008) drew on Johnson & Johnson (1989) and van Lier (1996) to argue that the act of teaching a less able interlocutor helps the higher level learner internalise forms more successfully than learning from a higher-proficiency interlocutor. In their study of four intermediate "core" learners paired with lower and then higher level learners, students collaboratively wrote an essay and then compared this to a researcher-reformulated version, noticing the differences. Core-high proficiency pairs produced higher frequencies of LREs in the original

writing and noticing stages, while core participants achieved slightly higher scores on the post-test (an essay rewrite) when they had worked with a lower proficiency partner. Less proficient learners, conversely, experienced difficulties internalising what their higher proficiency partner was teaching, possibly because they were not developmentally ready, or felt intimidated by the interlocutor.

These findings lend support to Williams (2001), who also investigated proficiency and the role of participants within LREs, observing whether the initiator of the episode, and the supplier of new input generated during the episode, was the student him / herself, the other learner in the dyad, or the teacher monitoring the dyad. She also used a tailor-made post-test to measure how learning was affected. She found that at all proficiency levels, no matter whether the LRE began with feedback on an error by the class teacher or with a learner's request for assistance, the learner was equally likely to remember the form, but also noted that when correct information was supplied by the other learner, the student's ability to remember this and answer the related test item correctly increased with proficiency. At lower levels, learners seemed to listen and remember less.

Differences in proficiency levels of participants within dyads may also account for different LRE foci. In Leeser's (2004) study, high proficiency-high proficiency (H-H) dyads focussed mainly on grammatical LREs, low proficiency-low proficiency (L-L) dyads focussed mainly on lexical LREs, and L-H dyads tended to focus more or less evenly on both lexical and grammatical LREs.

To summarise, differences in proficiency within dyads may affect LRE numbers, focus and retention of focalised forms, although there is no evidence to suggest that such effects may necessarily apply to learner-teacher dyads in one-to-one contexts.

2.9.3   Effects of Interaction Patterns.   A further aspect of interaction that has been demonstrated to affect LREs, and which is significant for learner-teacher dialogue in one-to-one, is the interaction pattern. According to Storch's (2001a, 2002) typology, dyadic interaction patterns may be (1) collaborative, (2) dominant / passive, (3) novice / expert or (4) dominant / dominant. In later studies, two more categories

were added: (5) cooperative (Tan, Wigglesworth & Storch 2010), and (6) expert / passive (Watanabe & Swain 2007). According to these types, in (1) collaborative interaction, both learners contribute to the task and respond to each other's ideas; in (2) dominant / passive dyads, one learners controls the task and the other does not engage; in (3) novice / expert dyads, influence over task completion is uneven, but instead of dominating, the more advanced interlocutor attempts to increase the novice's participation; in (4) dominant / dominant dyads both learners attempt to control the task and frequently disagree rather than engaging with one another; in (5) cooperative dyads both learners control the task but rather than engaging with each other, the end result is the addition of two individually prepared contributions; and (6) the expert-passive pattern resembles expert-novice but with the difference that the novice is unwilling to participate in the task.

These patterns draw on the work of Damon & Phelps (1989), who observed three types of interaction: peer tutoring, peer collaboration and cooperative learning. They identified that each kind of interaction differed in terms of a) equality, that is, the degree to which control over the direction of the task is shared equally by all participants, and participants take directions from each other; and b) mutuality, that is, the richness of reciprocal feedback and sharing of ideas. In Storch's (2001a, 2002) taxonomy, collaborative interaction is characterized by high equality and high mutuality; dominant/passive interaction by low equality and low mutuality; expert/novice interaction by low equality and high mutuality; and dominant/dominant interaction by high equality and low mutuality.

Watanabe & Swain suggest that the pattern of interaction may be even more significant for learning in peer talk than proficiency level, as learning in their studies (2007, 2008) appeared to occur regardless of the proficiency of the partner – a claim also supported by findings from Ohta 2001 and Storch 2001b. When the interaction pattern in their studies was collaborative, participants achieved higher post-test scores than pairs demonstrating one of the other interaction patterns. These findings are supported by Edstrom (2015), in which triads with a collaborative interaction pattern produced more LREs, resolved more LREs correctly, and involved more participants in the LRE than triads following other patterns. Further support is provided by Storch & Aldosari (2012), who found that high-proficiency – low-proficiency (H-L) pairs of

Saudi learners who collaboratively produced a written composition produced more LREs than L-L dyads, but only when the pattern of interaction was collaborative or expert-novice. In dominant-passive patterns, conversely, few LREs were produced. Storch & Aldosari suggest that optimal pairings may be task dependent: in tasks aiming to improve oral fluency, L learners produced longer turns when paired with another L-learner, L-L learners tended to form a collaborative interaction pattern, and H-learners produced long turns no matter who they were paired with. In tasks focussing on language accuracy, conversely, H-L pairings may only benefit the L learner if the pattern is not dominant-passive. Provided the pattern was collaborative or expert-novice, the H learner was able to provide word definitions (often in L1) or alternative ways to express the idea.

The above findings are of significance for the present study since in mixed proficiency dyads such as teacher-student pairs in the one-to-one mode there may be a greater probability of a dominant / passive relationship forming, given the typical asymmetricity of the relationship (Chi *et al* 2001). This may mean opportunities for language practice and focus on form are more limited than in S-S dyads. In the one-to-one teaching context, if learners benefit most from working with a teacher when the interaction is collaborative or expert-novice, rather than dominant-passive or expert-passive, this would lend support to Gibbons (2003) and Chi *et al* (2001)'s claims that Socratic, as opposed to didactic, teacher-student interaction is most beneficial.

2.9.4   Effects of Learners' Perceptions of Interlocutor Proficiency. In a further inspection of their stimulated recall and interview transcripts, Watanabe & Swain (2008) found that interaction may have unfolded as it did not necessarily as a result of measured differences in proficiency levels, but because of the interlocutor's *perceived* difference of proficiency, which may or may not coincide with proficiency as measured on pre-tests or coursework. One participant, for example, misperceived her higher proficiency partner as having a lower level because the partner listened a great deal; she also perceived her lower proficiency partner as having a higher level because the partner shared a lot of ideas. In other words, the participant perceived willingness to engage in collaborative dialogue as an indication of proficiency. The quantitative findings supported this observation, as more LREs occurred when the learner interacted with a lower proficiency partner, and the lower proficiency partner

initiated most of these. This finding is particularly interesting for the present study, where the participant's perception of a teacher in one-to-one class will almost certainly be that of a high-proficiency interlocutor, even if the quality of interaction in terms of languaging is not in fact better than with a peer in a student-student dyad.

To summarise, the research examining the effect of differences between interlocutors in expert-novice relationships suggests that interaction and learning may depend on a host of variables including both the real and perceived proficiency level of interlocutors and the interaction pattern. Given that no studies have so far attempted to compare learner-learner with learner-teacher LREs and learning, this is a gap in the literature that the present research aims to fill.

2.10 Engagement

In a number of studies (e.g. Leow 1997; Kuiken & Vedder 2002; Leeser 2004) it has been noted that while learners participate in and contribute to the resolution of LREs, there appear to be qualitative differences in their level of participation or involvement within episodes. As noted by Storch (2010), the qualitative differences in engagement within LREs has received relatively little attention in the literature thus far, with most of the work on engagement within education having so far taken place outside of Applied Linguistics. One of the reasons for this may be that engagement in language teaching research is conceptually new, and there is discussion regarding what it entails and how it may differ, for example, from intrinsic motivation or awareness.

This section defines and operationalises engagement by drawing on the educational literature, before discussing the empirical studies that have attempted to observe engagement and the related constructs of attention, awareness and elaborate noticing in language learning.

2.10.1 Theoretical Construct. In their seminal paper on engagement in school-age educational contexts, Fredericks *et al* (2004) identified three types of engagement that, taken together, are claimed to provide a multifaceted view of children's learning: i) behavioural engagement, which relates to students' participation in both academic and social / extracurricular activities, and which the authors claim is

necessary in order for learners to achieve academic success and to avoid dropping out of courses; ii) emotional engagement, which refers to learners' positive or negative affective responses to their teachers, peers and other people within their educational context, and which may promote a feeling of belonging to an institution and affect willingness to study; and iii) cognitive engagement, which "draws on the idea of investment; it incorporates thoughtfulness and willingness to exert the effort necessary to comprehend complex ideas and master difficult skills" (p60). Similarly, Svalberg's (2007, 2009, 2012) conceptualisation of learner engagement in language classrooms differentiates between three dimensions: i) the cognitive dimension, characterised by attentional focus, direction of cognitive resources and ability to solve problems; ii) the affective dimension, which relates to learners' attitudes towards task, interlocutor and task participation; and iii) the social dimension, relating to how learners initiate and respond to interaction.

In addition to the three types of engagement identified by Fredericks *et al* and Svalberg, a fourth category has been more recently added by Reeve (2012): agentic engagement, in which a learner attempts to enrich the learning activity rather than just passively completing it. Reeve proposes as examples of agentic engagement instances in which learners modify learning activities by seeking out a partner to perform tasks with, rather than doing tasks alone; personalising tasks, for example by generating options; and creating or requesting the learning opportunity, rather than waiting for it to be provided by a teacher. Agentic engagement therefore refers to

> "initiating a process in which the student generates options that expand his or her freedom of action and increase the chance for that student to experience both strong motivation and meaningful learning" (p. 162).

As noted by Fredericks *et al* (2004) and Philp & Duchesne (2016), such definitions of engagement bear close and complex similarities with constructs within the motivation literature. While a review of motivational concepts is beyond the scope of the current study, such concepts include intrinsic motivation, understood as a preference for challenge and persistence in the face of difficulty (Harter 1981) and interest in the subject area and enjoyment arising from completing the task at hand (Dörnyei & Ushioda 2013); motivation to learn (Brophy 1987), which refers to the

degree to which a student values learning and aims for mastery; and learning goals (Dweck & Leggett, 1988; Ames 1992), that is, the extent to which learners attempt to accomplish challenging tasks in order to reach current and future goals (Dörnyei & Ushioda 2013).

However, a useful distinction between engagement and motivation is proposed by Reeve (2012), who suggests that whereas engagement relates to the learner's active involvement in a learning activity such as a task (lasting a few minutes) or a course (lasting a few weeks or months), and can be publically observed in behaviour, motivation relates to a more private "force that energizes and directs behaviour" (p. 150). Understood in this way, motivation can be a source of engagement in a particular task.

2.10.2 Cognitive Engagement. Given the microgenetic focus on languaging events at the level of task in the present study, it is cognitive engagement that appears to be of greatest interest in the present research. Fredericks, *et al*'s understanding of cognitive engagement draws on definitions of psychological investment in task completion (Connell & Wellborn, 1991; Newmann, Wehlage & Lamborn 1992; Wehlage, Rutter, Smith, Lesko & Fernandez 1989), which emphasise learners' desire to go further than the requirements of a task, and a preference for challenge, rather than settling for the minimum required. Cognitive engagement may also involve flexibility in problem solving and a positive attitude when faced with failure (Connell and Wellborn 1991), positive psychological qualities that imply involvement at task level. Newmann *et al* (1992) and Wehlage *et al* (1989) concur that cognitive engagement entails psychological investment or effort in order to master the knowledge and skills that educational courses and tasks aim to promote.

Behavioural / social and emotional / affective engagement undoubtedly have roles to play in tasks and LREs, as demonstrated in recent research (e.g. Philp & Duchesne 2016; Lambert, Philp & Nakamura 2017). In the present study these may be observed both in the microgenetic analysis of languaging and also in post-task questionnaires and interviews. Furthermore, it appears that the types of engagement are interconnected and interdependent (Christenson *et al*., 2012; Philp & Duchesne 2016), which makes it potentially problematic to observe any one in isolation.

However, given that engagement is only one of a number of dependent variables under observation in the present study (alongside LRE number, resolution, microgenetic development and test responses), I have decided to narrow the focus of engagement in this research to cognitive only.

Specific, observable learner behaviours that can be used to operationalise cognitive engagement in tasks range from simple memorisation to the development of self-regulated learning strategies, that is, metacognitive strategies used by learners to plan, monitor and assess their thinking when performing tasks. Fredericks *et al* (2004) draw on multiple studies to identify such strategies, which include rehearsing, summarising and elaborating information in order to remember, organise and understand (Corno & Madinach 1983; Weinstein & Mayer 1986), remaining on task and avoiding distractions (Corno 1993; Pintrich & De Groot 1990) and creating connections between concepts and ideas (Weinstein & Mayer 1986). More recently, Helme & Clarke (2001) identified indicators of cognitive engagement in collaborative tasks that included completing peer utterances and making gestures and facial expressions, while Svalberg (2009) added the behaviours of comparing, asking questions and drawing inferences regarding the target language. Baralt *et al* (2016) identified attention to language forms, reflection on language, interactive support and positive attitudes as further indicators of cognitive engagement.

Despite recent interest in the concept of engagement in the literature, relatively few empirical studies have attempted to observe engagement in learners in language classrooms. The theoretically similar construct of intrinsic motivation, however, has been more extensively researched, most commonly through the use of self-report questionnaires that have attempted to measure the use of learning strategies. As noted by Fredericks *et al* (2004), a few studies (for example Gamoran & Nystrand 1992 and Nystrand & Gamoran 1991) have attempted to observe cognitive engagement within non-language classrooms by recording and analysing the frequency of "high-level evaluation and authentic questions".

The next sub-section will consider the studies that have attempted to observe engagement and related constructs within Applied Linguistics research.

2.10.3 Engagement, Attention, Awareness, and Elaborate Noticing within Applied Linguistics: Empirical Research. The relative newness of the concept of engagement in empirical language classroom research is evidenced by the small number of studies (Storch 2008, Baralt *et al* 2016 and Lambert *et al* 2017 are among the few) that have attempted to measure learners' engagement when they participate in LREs. The related concepts of attention and awareness, however, have a much longer history within ELT research.

Regarding attention, a distinction is drawn between three levels of attention – registration, noticing and understanding – by Schmidt (1990, 1993), who claims that the differences in these levels depends on the level of awareness, that is, a particular mental state in which a person has been subject to a specific subjective experience where there is some conscious processing within the working memory. In registration, there is detection without any conscious awareness. Noticing, on the other hand, involves awareness. Understanding involves more complex long-term memory processes and indicates the presence of system learning, rather than single item learning.

The significance of noticing in SLA has been emphasised by researchers working from a cognitive perspective, such as Robinson (1995) and Skehan (1998), who claim that noticing a form is a necessary (although not a sufficient) condition for language processing and acquisition. In Swain's Output Hypothesis attention plays a key role in the functions of output, namely that output raises learners' awareness, or consciousness, of gaps in their current language knowledge. Awareness is also crucial in Swain's notion of languaging, where talking about language encourages greater awareness and understanding of target language features. However, it should be noted that in languaging, the simultaneity of language and thought mean that the concept of awareness is not necessarily compatible with Schmidt's theories, which are defined based on assumptions and theorisations of neurological processes. The concept of languaging goes further than awareness: by talking about language, learners demonstrate not only that have registered, noticed and are in the process of understanding a concept, but that they are capable of talking about it, which in turn leads to greater awareness and understanding.

Few studies have attempted to observe engagement or the related concepts of noticing, attention and awareness within LREs. One study that predates Fredericks *et al*'s work on engagement is Leow (1997), in which "depth of noticing" was observed. Think-aloud protocols were used to observe learners' noticing of stem changes in irregular past tense verbs in Spanish, operationalised as verbal or written corrections of the form. Leow observed that some noticing was simple, with learners merely stating or repeating the linguistic item they had noticed, whereas other noticing was elaborate, that is, there was verbalisation of some aspect of the noticing process, for instance a morphological rule, and this was considered evidence of systemic processes such as hypothesis testing or the proposal of rules. Immediate post-tests suggested that elaborate noticing, compared to simple noticing, had led to better receptive knowledge of the verbs, and slightly more accurate productive ability as measured by a cloze text.

Further evidence that the quality of noticing may impact on language development was provided by Qi and Lapkin (2001) in their examination of think-aloud protocols produced by two adult learners as they compared their original written composition to a researcher-reformulated version. The noticing observed was of two types: perfunctory, where learners stated the difference they had noticed, and substantive, where learners stated the differences and talked about linguistic reasons the change had been made. When learners performed a subsequent re-write, the items that had been subject to substantive noticing were more often remembered and incorporated into the rewrite than the items that had been noticed perfunctorily. The theoretical implication of these findings is that noticing the gap may not in itself be sufficient for learning: an explicitly stated awareness of the gap may also be necessary.

The distinction between elaborate and simple noticing in LREs was also drawn by Kuiken & Vedder (2002) in their study comparing the performance of individuals and pairs on a dictogloss task. Simple noticing occurred where the targeted passive forms were mentioned but not discussed, whereas elaborate noticing occurred when a passive was put into question and discussed and / or alternative structures proposed. While there were no claims for learning or consolidation of forms based on post-tests, many instances of elaborate noticing were identified. However, there was a high

degree of variability between dyads, and learners tended to avoid using targeted structures in reconstructed texts. Similarly, LREs produced by seven triads of university learners of Spanish drafting a script for a subsequent oral presentation were analysed by Edstrom (2015), who categorised LREs in terms of resolution and also according to whether they were limited, with a single participant providing the resolution, or elaborate, where the resolution was reached through group discussion. Most LREs were elaborate.

One of the first studies on languaging to employ the concept of engagement, and thus go beyond the notions of simple / perfunctory / limited / elaborate / substantive noticing, was Storch (2008). In her observations of dyads of ESL learners performing a text reconstruction task, she first analysed LREs for focus (form, lexis or mechanics), secondly for resolution, and thirdly for engagement. She defined elaborate engagement as deliberation over language items, seeking and providing confirmation and explanations, and suggesting alternatives. This compared to limited engagement, in which learners simply stated a linguistic item without further deliberation. Within limited engagement, Storch drew a further distinction between limited engagement (L) in one learner only, for example where one learner made a suggestion and the other did not respond, or simply made a phatic utterance such as "OK" or "yeah" (from which it is not possible to determine level of engagement), and engagement in which both participants engaged in a limited way with the item topicalised in the LRE (L+L). While she found a large proportion of LREs were resolved with elaborate engagement, almost a third were resolved by limited engagement in the resolution by one learner (L). The level of engagement appeared to depend on LRE focus: verb morphology, article choice and word forms involved elaborate engagement – perhaps, Storch suggests, because they are structurally more difficult and require consideration of rules, meaning, and verb-tense consistency – whereas LREs about prepositions demonstrated less elaborate engagement, as the correct preposition (for example "reasons + for", as opposed to "reasons + of") is lexically rather than semantically determined.

The level of engagement did not, however, appear to be related to LRE resolution, with a figure of around 80% correct resolution regardless of the level of engagement. There was also evidence of some learning and consolidation of

knowledge regardless of the level of engagement, as demonstrated on a second, isomorphic text reconstruction task in which the correct use of language items discussed in LREs was taken as evidence of learning or consolidation. However, this learning and consolidation occurred more consistently following elaborate engagement than limited engagement. In most elaborate engagement cases, both learners showed learning / consolidation, whereas limited engagement (L+L) led to more learning / consolidation for the initiator than for the responder. Storch's claim that elaborate engagement had encouraged a deeper level of understanding than limited engagement, and may be more closely associated with learning and consolidation because it relates to system learning rather than item learning, is consistent with Schmidt's (1990, 1993) proposal of different levels of noticing.

Cognitive engagement, together with social and behavioural engagement, was identified by Lambert *et al* 2017 in their comparison of learner-generated and teacher-generated content in narrative tasks completed by Japanese learners. The authors measured cognitive engagement by identifying the number of clauses that expanded on semantic content (e.g. suggestions, reasons and opinions) and also the number of moves evidencing negotiation of meaning. They found significantly greater learner engagement when content was learner-generated. While the study did not consider the effect of differences in engagement on learning gains, a key finding was that learners who were more cognitively engaged also appeared more affectively engaged. The authors draw on Swain's (2013) discussion of the inseparability of cognition and emotion by highlighting that increased affective engagement may be associated with increased salience and memorability of learning opportunities.

To summarise, while the underlying cognitive processes of noticing and languaging are theorised differently between psycholinguistic and sociocultural models, there is agreement in the research findings that differences in levels of engagement, or depth of noticing, have the potential to impact learning. The present study will therefore categorise LREs not just in terms of their focus and resolution, but also in terms of whether cognitive engagement is limited or elaborate. Following Storch (2008), limited engagement will be operationalised as instances in which a linguistic item is stated without further deliberation, including when, in the student-student or student-teacher condition, there is some phatic utterance such as "OK" or

"yeah", but no further evidence of engagement. Following the educational literature on engagement, LREs will be categorised as demonstrating elaborate engagement when there is evidence of a metacognitive self-regulation strategy. Such strategies include elaborating on linguistic choices made (Storch 2008), for example by seeking and/or providing justifications for these choices; noticing and reflecting on language forms (Baralt *et al* 2016); comparing, asking questions and drawing inferences regarding the target language (Svalberg 2009); flexibility in problem solving, for example by generating options from which to choose (Reeve 2012); creating connections, for example by hypothesis testing or generating rules (Weinstein & Mayer 1986); attempting to go further than the requirements of the task (Connell & Wellborn, 1991; Newmann *et al*., 1992; Wehlage *et al*., 1989; Reeve 2012); demonstrating a positive attitude in the face of difficulties (Connell and Wellborn 1991); remaining on task when there are possible distractions (Corno, 1993; Pintrich & De Groot, 1990); and rehearsing and/or summarising items (Corno & Madinach 1983; Weinstein & Mayer, 1986).

2.11 Task Type: Effects on LREs

The present research observes learners in the three modes doing two language learning tasks. Researchers from both cognitive and sociocultural perspectives on SLA have found that tasks themselves may influence the quantity and focus of LREs produced. In some cases, increasing task complexity, that is, the number of cognitive resources required to complete the task (Robinson 2001), has been found to be associated with a greater number of LREs, greater focus on form, and better learning outcomes (Révesz 2011; Kim 2012; Baralt 2014). A number of other features of task design have also been found to interact in different ways that affect the quantity, focus and resolution or LREs, and learning associated with these. The following section will discuss these features and effects in order to justify decisions regarding the tasks employed in the present study.

García Mayo (2002a) compared text reconstruction, in which learners inserted into a gapped text appropriate function words (e.g. articles and prepositions), linking words and inflectional morphemes, with dictogloss (Wajnryb 1990), in which learners heard a text read out loud at normal speed, jotted down key ideas, and then collaboratively reconstructed the text, which was then compared to the original. The

author found that text reconstruction generated eight times as many LREs as dictogloss (96 versus 12), and that almost all the LREs observed were grammatical. The author suggests that the large difference in LREs produced may be a result of the difference in task stimulus and task demands. In dictogloss, the auditory stimulus meant that there was an initial task of understanding the spoken input, followed by an attempt to produce a cohesive extended text. Learners may therefore have focussed on discourse features beyond the sentence level rather than issues of form that typically arise in grammatical and lexical LREs. In text reconstruction, on the other hand, the stimulus was written down, and this written input appeared to allow learners to discuss issues of form while completing the task. The tasks also practised different linguistic features: LREs produced in text reconstruction were related to the language features targeted by the task, whereas in dictogloss, LREs focussed on aspects of constructing a coherent paragraph.

A separate study (García Mayo 2002b) again found dictogloss to produce the lowest number of LREs when compared with four other tasks: cloze, multiple choice, text reconstruction and text editing. While the rest of the activities generated learner talk and reflection on language, and involved learners in hypothesis testing, dictogloss again appeared to suffer from the oral stimulus (the stimuli for the other four tasks were written down), together with learners' lack of familiarity with the task.

Storch 1998 compared the number and nature of LREs produced in four tasks (multiple choice, cloze, text reconstruction and written composition), finding that while in all tasks the number of turns was high, only the first three of these produced a high proportion (over 70%) of LRE turns compared to the total number of turns. The composition task, on the other hand, did not produce as many LREs (constituting just 28% of turns), but instead generated talk about the elaboration of ideas and planning. In a later review of LRE studies, Storch (2013) notes that meaning-focussed tasks – of which composition is an example – tend to generate fewer LREs than language-focussed tasks, and LREs in meaning-focussed tasks tend to be lexical, compared to more grammatical LREs dealing with morphosyntaxis in language-focussed tasks. However, she also notes that in meaning-focussed tasks, more LREs are correctly resolved, since they usually arise from gaps that learners themselves recognise, rather

than seeded forms. Solutions therefore tend to be within learners' linguistic capabilities.

The claim that language-focussed tasks – that is, communicative tasks that provide practice in specific grammatical or lexical features – are associated with fewer correctly resolved LREs than meaning-focussed tasks – that is, tasks that provide general communicative language practice without focussing on a specific linguistic feature – is supported by findings from Alegría de la Colina & García Mayo (2007), who compared the number and nature of LREs across three tasks (text reconstruction, a pictorial jigsaw and dictogloss). The tasks produced a high number of LREs (206, 165 and 92 respectively), and many of these were correctly resolved, from which it may be interpreted that all three task types were effective at drawing attention to form. However, while the text reconstruction produced the highest number of LREs, it also produced the highest percentage of unresolved LREs. The authors claim that text reconstruction tasks, while successful at stimulating discussion about form, may force learners to topicalise items that are beyond their ability level. In the meaning-focussed jigsaw, conversely, focus on form derived from learners' own communicative needs, and therefore resolutions to LREs were more often within learners' ability.

Alegría de la Colina & García Mayo (2007) also found that task type, and in particular the nature of language input in the task, conditioned LREs focus. Text reconstruction involved written input and therefore elicited LREs focused on the forms that the teacher / researcher chose to delete in the original text, a pictorial jigsaw elicited LREs focused on a wide range of linguistic features as there was no linguistic input, and dictogloss elicited LREs focused on connectors and spelling, again as there was no written input. Additionally, the number and nature of LREs may depend on the nature of the text, when input is a text. For this reason the authors advocate the use of texts on topics that are familiar to learners (maritime texts, for example, were used with maritime students) rather than the "episodic" texts used in Wajnryb (1990), the content of which EFL students may, they claim, find more difficult to retain and reconstruct.

Little research has so far explored the appropriateness of tasks to different delivery modes, although findings from Baralt (2013) suggest that differences in task complexity may make certain tasks more effective in certain modes. In her study,

FTF and SCMC learners were assigned one of two versions of a story retell task, one more complex than the other in that learners had to express hypotheses regarding the actions that were carried out in the story. For FTF learners, the more complex task led to more learning, as measured by multiple-choice post-tests; for SCMC learners, conversely, the less complex task led to more learning. The results therefore suggest that less complex tasks are better suited to online interaction, and the reported facilitative effects on learning of increasing task complexity (Révesz 2011; Kim 2012; Baralt 2014) may not necessarily translate from one mode to another.

To summarise, the evidence that task type affects languaging and learning in different ways has informed the decision in the present study to employ two tasks rather than one:

i) passage editing, a language-focussed task that has been claimed to draw learners' attention to a range of language forms (Storch 1997) and lead learners to discuss and reflect on language choices and test hypotheses (García Mayo 2002b); and

ii) written composition, a meaning-focussed task that, when produced collaboratively, is effective at eliciting metatalk because it is communication-focussed but provides opportunities for emerging FonF (Swain & Lapkin 1995).

Rubrics will be written rather than spoken, given the positive impact this appears to have on task performance. The design of these tasks and further reasons for their selection will be discussed in Chapter III: Methodology.

2.12 Research Questions for Main Study

In light of the preceding review, there is a need to compare learner interaction and educational outcomes between face-to-face, one-to-one and online delivery modes. This comparison should include an assessment not only of the number, focus and resolution of LREs, but also of the level of engagement in episodes, and of languaging occurring in inner speech when learners perform tasks individually. The capacity of Vygotskian SCT to account for learning between peers, between a learner and a teacher, and alone, makes it an appropriate lens through which to examine such interaction and learning.

With this in mind, the following research questions are proposed:

1) How do the number, focus and resolution of LREs differ when EFL learners do the same tasks in three delivery modes: i) face-to-face group classes (in learner-learner dyads); ii) one-to-one private tuition contexts (in learner-teacher dyads); and iii) asynchronous online contexts (individually)?
2) How does learners' engagement in LREs differ between the three delivery modes?
3) How does learning of the forms topicalised in LREs, in terms of microgenetic development and post-test performance, vary between the three delivery modes?
4) What are the broader implications for delivery mode and language learning?

The next chapter will detail the methodology employed in the pilots and main studies.

CHAPTER III: METHODOLOGY

This chapter begins with a discussion of the present study's quasi-experimental method and details the two pilots that preceded the main study. It goes on to provide an overview of the procedure of the main study, followed by a detailed description of:

    i)   the participants;

    ii)   course content and duration;

    iii)   steps taken to ensure ethical consent;

    iv)   pre-task modelling;

    v)   the two tasks employed;

    vi)   think-aloud protocols in the individual mode;

    vii)   the post-test;

    viii)   the questionnaire;

    ix)   interviews;

    x)   the methodology of data analysis and, finally

    xi)   the quantitative analytical methods employed.

3.1   Method

The study is situated within the tradition of sociocultural classroom research and more specifically a Vygotskian framework. The study meets the following of Mercer's (2010) criteria for sociocultural classroom research, as it is:

- observational – it involves an examination of learning events through data collection and analysis;

- quasi-experimental – comparisons are made between different groups; and

- mixed-methods – data from audio-recorded learner talk, questionnaires and interviews is qualitative, but analysis is both quantitative and qualitative.

The present study employs a classroom-informed design, in which activity is situated and analysed in context, in order to strengthen ecological validity. While the tasks employed were controlled across the three modes in order to ensure comparability, elements of existing the classrooms were maintained: data collection involving dyads took place in intact classrooms, with participants who were already

studying in group or one-to-one classes; individual online learners, who were studying from home, also participated from home. This commitment to ecological validity is a characteristic of research within a Vygotskian sociocultural tradition, as noted by Thorne (2005):

> "though context, language (both learning and use), and subjectivity are analytically separable, and can be profitably examined as such, such analyses are most useful when embedded in a holistic process ontology" (p. 398).

The mixed methods approach to data collection and analysis, summarised in Figure 1, allowed me to build up a thick description of interaction and learning by observing multiple aspects of the three modes within an ecologically valid framework. Each aspect of this approach is described in detail in the corresponding sections of this Methodology chapter.

As Figure 1 shows, the first and principal qualitative data set was transcribed learner talk. In order to draw comparisons between modes within the quasi-experimental design, the analysis of this data was quantitative: learner talk was quantitatively analysed for LRE number, focus, subfocus, correctness of resolution and LRE initiator and resolver, in order to answer Research Question 1, regarding quantity and quality of LREs. This same learner talk was also analysed for instances of limited and elaborate engagement, in order to answer Research Question 2 regarding engagement. The talk was analysed further for instances of observed microgenetic development, in order to contribute to answering Research Question 3 regarding learning.

A second qualitative data set was written post-test responses, which were quantitatively analysed for numbers of responses a) in agreement with LRE resolution, b) in disagreement with LRE resolution, c) responses when the LRE had been left unresolved, and d) responses when there had been no corresponding LRE, in order to contribute to answering Research Question 3, regarding learning.

A third qualitative data set was transcribed semi-structured interviews, which were qualitatively analysed for emerging themes in learners' comments, in order to answer Research Question 4, regarding broader implications for language learning.

Figure 1: a mixed-methods approach to data collection and analysis

Data	Analysed for…	In order to answer…
Qualitative		
LREs in transcribed learner talk	• Number • Focus • Sub-focus • Resolution • Identity of initiator and resolver	RQ1: How do the number, focus and resolution of LREs differ when EFL learners do the same tasks in three delivery modes?
	• Limited and elaborate engagement	RQ2: How does learners' engagement in LREs differ between the three delivery modes?
	• Instances of microgenetic development	
Post-test responses	• Responses in agreement with LRE resolution • Responses in disagreement with LRE resolution • Responses when LRE had been left unresolved • Responses when there had been no corresponding LRE	RQ3: How does learning of the forms topicalised in LREs, in terms of microgenetic development and post-test performance, vary between the three delivery modes?
Interviews	• Emerging themes regarding learners' feelings and beliefs about learning in the three modes	
Quantitative		
Questionnaire responses	• Age • Gender • Years studying English • Reasons for studying English • Previous study modes • Reasons for current mode choice	RQ4: What are the broader implications for delivery mode and language learning

The only quantitative data were participants' questionnaire responses, which were quantitatively analysed for age, gender, number of years studying English, reasons for studying English, previous study modes, and reasons for choosing the current study mode.

The study employs a between-subjects design, as comparisons are drawn between participants in the three conditions. It draws data from a non-random convenience sample (Wagner 2010), as only students taught by teachers who gave ethical consent were observed.

3.2   Pilot Studies

I conducted two pilot studies in order to examine methodological issues that I believed would affect the main study. These pilots and their results are described in this section.

3.2.1   First Pilot Study

3.2.1.1 Purpose. The first pilot study compared the effectiveness of collecting LRE data in the individual mode using a) unprompted think-aloud protocols and b) prompted immediate recall. Since individual participants were studying online at home, I wanted to assess whether their LREs could be observed by asking them to independently complete tasks and record themselves thinking aloud, or if I would need them to come to the school and prompt the think-aloud. I also wished to assess whether the pilot task was challenging enough for use in the main study.

3.2.1.2 Method. Six online students participated: three in the at-home unprompted condition, with pseudonymised names beginning with U, and three in the in-school prompted condition with pseudonymised names beginning with P. The at-home unprompted participants audio recorded themselves on their mobile phones while completing a passage editing task; they were instructed to say out loud everything they were thinking as they edited the text. They then emailed me the resulting mp3 file. The in-school participants completed the task with me beside them, and were asked to say out loud everything they were thinking. I prompted them with "tell me what you're thinking" if they began to write without verbalising. I recorded these participants using an mp3 recorder.

3.2.1.3 Task.   Learners completed the First Pilot Passage Editing Task (Appendix 1) in which they corrected seeded errors related to forms they had studied during their course (see Table 1).

Table 1
Errors seeded in First Pilot Passage Editing Task

Language area	Forms	Exponents	Errors seeded in First Pilot Task
Lexis	Verb-noun collocations with "take"	to take a moment to take advantage	to catch a moment to make advantage
Lexis	Two-part phrasal verbs	turn up (= arrive) go out (= leave)	turn out go about
Lexis	Modals: *can*, *might**	it might be quite late I will definitely put…	it can be quite late I might definitely put…
Grammar (morphology)	Prefixes**	<u>un</u>necessary <u>mis</u>understanding	innecessary disunderstanding
Grammar (tense and aspect)	*used to* + infinitive vs. past simple *used to* + infinitive vs. *be used to* + gerund	I said in my last email… We are used to having a late check out	.. I used to say in my last email We used to having a late check out
Grammar (tense and aspect)	Future continuous	We will be getting in We'll be arriving	We'll getting in We'll be arrived
Discourse A total of 12 inappropriacies in register	Formal versus informal expressions to be avoided in formal letters / emails	1) Dear 2) I'm + ing 3) Very much 4) Million 5) Good 6) Excellent 7) Excellent 8) Give you a call 9) Is there any chance 10) Best wishes 11) I look forward to hearing from you 12) Do you have any recommendations	1) Hi 2) Just + *ing* 3) MILLION (choice of informal lexis) 4) MILLION (capitalization) 5) Cool 6) BRILLIANT (choice of informal lexis) 7) BRILLIANT (capitalisation) 8) Give you a buzz 9) Any chance 10) Bye for now 11) See you soon 12) Any recommendations?

* modals are considered lexis rather than grammar, following Fortune & Thorpe (2001)
** morphology is considered a component of grammar, rather than lexis, following Williams (2001) and Storch (2007)

3.2.1.4 Results and discussion.   Table 2 presents the numbers of LREs produced in the prompted and unprompted think-alouds in the first pilot, with the mean number of LREs per participant.

Table 2
LREs in prompted and unprompted conditions, First Pilot Passage Editing Task

				Total	**Mean**
Prompted (n = 3)	Paola	Pedro	Priscila		
LREs	11	30	13	54	18
Unprompted (n = 3)	Uta	Ursula	Ugo		
LREs	30	36	37	103	34.3

Unprompted participants produced almost twice as many LREs as prompted participants. My presence as a researcher therefore appeared not to aid but rather to inhibit language production. The think-aloud protocols suggested the presence of language anxiety regarding the procedure and / or making mistakes, probably as a result of my presence (Swain 2013). Paola, for example, apologised and asked questions regarding the procedure and requested me to answer form-related questions. Likewise, she was unwilling to verbalise forms she was uncertain about even when prompted. If, as Vygotsky (2012: 11) proposes, there exists a "dynamic system of meaning in which the affective and intellectual unite", then negative emotions such as anxiety may have affected Paola and Priscila's cognition and / or verbalisation of cognition. The unprompted learners, conversely, may have felt more comfortable unaccompanied, given this was their normal mode of studying, and this may have positively affected their languaging. If this is the case, it supports the importance of ecologically valid studies that observe learners in their natural learning context, rather than, for example, asking habitual group learners to perform tasks alone for the purposes of a lab study (as in Swain & Lapkin 1995 and Kim 2008).

Furthermore, prompted participants may have been less willing to talk because they did not perceive the task to be a think-aloud in which they talk to themselves, but rather one in which they were supposed to interact with the interlocutor. They may have felt uncomfortable having a perceived interlocutor who did not speak, except to prompt. Prompted participants may have had the capacity to language, but this either did not happen or was not made visible because the presence of the mainly silent interlocutor created the expectation of social interaction, which did not occur. Participants were plausibly making meaning of the presence of a mainly silent interlocutor, responding as they felt was socially appropriate – by speaking less than normal.

I also observed an inverse relationship between the amount of prompting and the number of LREs produced. Paola, who produced the fewest LREs, received six prompts; Priscila, who produced 13 LREs, received two prompts; Pedro, who produced 30 LREs, needed no prompting. While the increased prompting was a result of fewer LREs being verbalised, it is also plausible that the prompting was itself negatively affecting participants' confidence in their ability to verbalise LREs, in a vicious circle.

In order to assess the degree of challenge inherent in the task, LREs were also coded for correctness of resolution. The results are presented in Table 3.

Table 3
LRE resolution in prompted and unprompted conditions, First Pilot Passage Editing Task

		LREs	% of total LREs	Mean
Correctly resolved	Prompted	34	63%	11.3
	Unprompted	75	73%	25.0
Incorrectly resolved	Prompted	11	20%	3.7
	Unprompted	20	19%	6.7
Unresolved	Prompted	9	17%	17
	Unprompted	8	8%	2.7

The correct resolution rate of between 63% and 73% indicated that learners in both conditions could correctly resolve most of their LREs, which was perhaps unsurprising given that the forms seeded in this task were part of learners' course of study. This led me to question whether the task was challenging enough for learners, so I decided to perform a second pilot study.

3.2.2 Second Pilot Study. In order to investigate the degree of challenge in the passage editing task, I developed a Revised Passage Editing Task (Appendix 2) which was seeded not only with forms studied during the course, but also with errors produced by a total of N = 9 B2 learners (n = 3 group learners; n = 3 one-to-one learners; n = 3 online learners) in formal written reports they produced as classwork[3]. In total, 58 errors were identified in the nine pieces of writing. These were:

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[3] As Director of Studies I was able to ask teachers to provide me with samples of learners' classwork, produced in the months prior to the study.

- 17 lexical errors, including the use of L1 Spanish false cognate *formation* instead of *training,* prepositions of place *in, on and at*, and prepositional collocations with *make* and *consist*;

- 19 grammatical errors, including the underuse of zero articles, subject-verb agreement in *there is/was* and *there are/were*, and inconsistent use of modals *will, shall, should* and *would*;

- 22 mechanics errors, including single rather than double consonants in spellings, the non-capitalisation of countries and languages, and run-on sentences using commas rather than full stops and capital letters.

The revised passage editing task was therefore seeded with the errors in Table 4, which reflected not only forms studied during the course but also learners' errors in writing. A new set of six online learners performed this revised passage editing task individually and unprompted, and their think-alouds were recorded and transcribed. The number of correctly resolved episodes was now 64%, compared to the 73% unprompted figure in the first pilot. 9% of LREs were incorrectly resolved, and unresolved episodes accounted for 28% of the total. From this drop in correctly resolved episodes between pilots I interpreted that this second task provided more challenge, and I therefore decided to employ this revised passage editing task in the main study.

Table 4
Errors seeded in the Revised Passage Editing Task

Language focus	Type of error	Suggested target exponents	Errors seeded in task
Lexis A total of 6 lexical errors	The use of Spanish false cognate "formation" instead of "training"	training	1, 2) formation (x2)
	Preposition of place	in, on, at	3) on the city 4) at my country
	Verb + preposition collocations	depend on	5) depend of
	Make versus do	doing leisure activities	6) making leisure activities
Grammar A total of 6 grammatical errors	Modal verbs	would, shall, should	1) if I would come to study with you 2) how much time shall I have to pay
	Subject-verb agreement	There is/are There was/were	3) there were something 4) are there a chance?
	Use of zero article for speaking generally Use of zero article for languages	Language learning Russian	5) The language learning 6) The Russian
Mechanics A total of 6 mechanical errors	Spelling: use of single instead of double consonants	impossible approximate	1) imposible 2) aproximate
	Run-on sentences using commas instead of full stops, semi-colons or connectors	… BRILLIANT. I'm really looking… … languages too. At my country…	3) … BRILLIANT, I'm really looking forward… 4) … languages too, at my country…
	Non-capitalisation of countries and nationalities	Spain UK	5) spain 6) uk
Discourse A total of 12 inappropriacies in register	Formal versus informal expressions to be avoided in formal letters / emails	1) Dear 2) I'm + ing 3) Very much 4) Million 5) Good 6) Excellent 7) Excellent 8) Give you a call 9) Is there any chance 10) Best wishes 11) I look forward to hearing from you 12) Do you have any recommendations	1) Hi 2) Just + *ing* 3) MILLION (choice of informal lexis) 4) MILLION (capitalization) 5) Cool 6) BRILLIANT (choice of informal lexis) 7) BRILLIANT (capitalisation) 8) Give you a buzz 9) Any chance 10) Bye for now 11) See you soon 12) Any recommendations?

3.3   The Main Study: Overview of Procedure

Figure 2 provides an overview of the procedure followed for the main study. In the subsequent sections of this chapter each stage is described in more detail.

Figure 2
Overview of procedure for main study

Stage	Description
Informed consent (Week 1)	• Participants and institution provided informed consent.
Assessment of prior knowledge (Week 1)	• Assessment of prior knowledge based on the results of institutional placement test (new students) or previous end-of-level test returning students), and mid-course progress test.
Pre-task modelling (Week 1)	• Participants watched a short excerpt of learners in the middle of a passage editing task (different from the task used in this study), which served as a model.
Task 1: Passage Editing (Week 1)	• Participants performed a language-focussed passage editing task. Participants in student-student and student-teacher dyads talked together to complete the task; individual participants thought aloud as they completed the task. Spoken output was audio-recorded for subsequent transcription. Approximate time = 15 minutes.
Post-test (Week 2)	• Participants completed the post-test, an isomorphic passage editing task. Approximate time = 15 minutes.
Task 2: Written Composition (Week 3)	• Participants completed a meaning-focussed written composition. Participants in dyads produced the composition collaboratively; individual participants wrote alone. Participants talked through language issues that arose, and were audio-recorded. Approximate time = 15 minutes.
Exit questionnaires (Week 4)	• A questionnaire was applied to participants to explore learners' reasons for choosing this delivery mode, their experiences with other delivery modes, the benefits and drawbacks they perceive in each mode, and whether they would prefer to study in a differnet mode., as well as gather demographic data. Approximate time = 10 minutes.
Interviews (Week 4)	• Short unstructured interviews further examined learners' perceptions of modes and of their experiences in the current study. These were conducted in English, but the interviewer also spoke participants' L1 . Approximate time = 10 minutes.

Regarding the timeline of the study, the timescale was kept as short as possible – four weeks – in order to minimize potential problems of learners dropping out of their course before their participation had ended. The post-test was conducted one week after the task, in order for forms languaged the previous week to be relatively fresh in learners' minds. The short time between task and test was, however, a potential limitation, as any learning associated with LREs may take longer than this to

occur, or to be made visible to an observer, based on the assumption that language learning is not a linear process (Ellis 1997). A longitudinal study that attempts to gather data on subsequent receptive recognition and productive use of forms languaged could help overcome this limitation, although a longer period would also increase the likelihood that forms languaged in episodes receive further attention in class, thus making it more difficult to trace subsequent recognition or use back to the LRE.

3.4   Participants

Participants for the main study were N = 60 adult Spanish learners studying with a private language school in Spain. The N = 60 learners comprised n = 30 learners in 15 student-student dyads in group classes, n = 15 learners in 15 student-teacher dyads in one-to-one classes, and n = 15 individual learners studying alone online. In the remainder of this thesis, group learners are pseudonymised with names beginning with G, one-to-one learners with names beginning with O, and individual online learners with names beginning with I.

I administered an exit questionnaire (Appendix 3) to collect participant information relating to three areas: demographics, previous English learning experience, and reasons for choosing current study mode. The demographic information included age group, gender, country of education and current profession. Regarding previous learning experience, participants specified the number of years they had been learning English, where they learned it, their main reasons for studying (e.g. to improve work opportunities, or because it is a school requirement), and previous modes of study. The questionnaire elicited reasons for choosing their current study mode by having participants rate on a Likert scale of 1 (not important) to 4 (very important) eight possible reasons for choosing their current mode. Participants received different prompts depending on their mode of study, but the focus of the prompts matched in order to ensure comparability of responses between the three modes: item one, for example, focused on learners' preferred interaction dynamic for performing tasks; item two focussed on how comfortable learners felt in certain class sizes; item three focussed on opportunities for language and skills practice, and so on. These eight foci were based on anecdotal evidence I had obtained previously from

learners at the language school regarding reasons for choosing one particular study mode over another.

Questionnaire results are discussed in the following subsections.

3.4.1 Demographic Information. Participants' responses about age, gender, number of years studying English, reasons for studying English, and previous study modes are presented in Table 5.

Table 5
Participant demographics, years studying English, reasons for studying and previous study modes

Variables	Age (mean)*	Gender		Years studying English (mean)	Reasons for studying English						Previous study modes		
Categories		Male	Female		For enjoyment	For tourism	To improve work opportunities	A job requirement	A school / university requirement	Other	Face-to-face group	Face-to-face one-to-one	Individually online
Group (n = 30)	31.6	13 (43%)	17 (57%)	17.5	13	13	25	8	9	0	29	12	1
One-to-one (n = 15)	35	8 (53%)	7 (47%)	19.0	6	7	13	5	7	0	15	9	4
Individual (n = 15)	32.8	4 (27%)	11 (73%)	19.0	8	4	14	6	7	0	13	2	14

* As ages were recorded in bands, e.g. 40 – 49, the mid-point in each band, e.g. 44.5, was used to calculate means.

Responses were compared between modes using ANOVAs (where responses in all three modes appeared normally distributed) or Kruskal-Wallis H-tests (where responses in one or more mode did not appear normally distributed). Where these tests indicated a significant difference between the three modes, post-hoc *t*- or U-tests between pairs of modes were performed. In these post-hoc tests, the alpha level was reduced from .05 to .025, as a Bonferroni correction was applied to mitigate the risk of error caused by using the same data in multiple tests.

The tests revealed no significant differences at the *p* = .05 level between participants in terms of their age, gender, number of years studying English or reasons for studying English, the most common of which was to improve work opportunities. However, in terms of previous study modes, individual online learners had significantly greater prior experience of online learning than face-to-face group or one-to-one learners, as might be expected.

3.4.2 Reasons for Choosing Current Study Mode. The questionnaire asked participants to rate on a scale of one (not important) to four (very important) eight possible reasons for having chosen to study in their current mode, rather than a different mode. Table 6 presents the mean responses.

Table 6
Mean ratings out of 4 awarded to each reason for choosing current study mode

	1: Interaction preference	2: Feeling comfortable	3: Skills practice	4: General or specific focus	5: Sources of feedback	6: Value for money	7: Location	8: Routine / flexibility
Group (n = 30)	3.2	2.9	3.5	2.9	3.0	3.1	3.1	3.5
One-to-one (n = 15)	3.4	2.5	2.9	2.1	3.1	1.5	2.3	2.5
Individual (n = 15)	3.3	3.0	2.9	2.9	2.9	2.5	3.5	3.9

Statistical comparisons revealed no significant differences between modes in the ratings of the following reasons for choosing the current study mode:

- a preference for doing tasks in the interaction mode favoured by each context, i.e. with other students in group mode, with the teacher in one-to-one, or alone in individual online learning;
- feeling comfortable in their chosen mode;
- sources of feedback associated with each mode, i.e. from peers in group classes, from the teacher in one-to-one and from the computer in online.

However, significant differences were found between modes regarding the following reasons for choosing current study mode.

3.4.2.1 Specific skills practice favoured by each mode, i.e. speaking practice in group and one-to-one classes, and reading, writing and listening practice in individual online learning. Group learners' rating of *importance of getting speaking practice with other students* were significantly higher than one-to-one learners' ratings of *getting speaking practice with their teacher*, or individual learners' rating of *being able to focus on skills other than speaking*. Group learners therefore viewed dyadic oral interaction as a more important consideration when choosing mode than one-to-one learners viewed oral interaction with their teacher, or online learners viewed being able to focus on reading, writing and listening.

3.4.2.2 Wanting to focus on general language (group and online modes) or specific language (one-to-one mode). Group learners' ratings of *wanting to focus on general English* were significantly higher than one-to-one learners' ratings of *wanting to focus on specific language*. Perhaps surprisingly, one-to-one learners did not value particularly highly the ability to have a specific language focus in class as a reason for mode choice.

3.4.2.3 Value for money. Significantly higher ratings were awarded by group learners and individual learners than one-to-one learners, which is perhaps unsurprising given that one-to-one classes are the most expensive.

3.4.2.4 Location / distance to school. Significantly higher ratings were awarded by group and individual than one-to-one learners to *proximity to / distance from the school* as a reason for mode choice. Proximity to the school was therefore an important consideration for group learners, and being far from the school was an important consideration for online learners. This suggests that learners have very practical, logistical reasons for mode choice. Data from post-hoc interviews lends support to this claim:

Me: You say that because of the distance you cannot get to the school, and this is an important reason for studying online
Inga: Yes, it is impossible for me, cos I live in the countryside and then, the school is in [the city].
Me: OK
Inga: It is so far from my house, so I prefer, this, this alternative of the internet

3.4.2.5 Routine / flexibility. Significantly higher ratings were awarded by group and individual learners than one-to-one learners to the importance of *routine or flexibility*. So, while flexibility was a very important consideration for online learners, and routine was a very important consideration for group learners, routine was not as important a consideration for one-to-one learners.

3.4.3 Preference for a Different Mode. The questionnaire asked participants if they would prefer to be studying in a different mode, and if so, which, and why. The results are presented in Table 7.

Table 7
Number of participants who would prefer to be studying in a different mode

	No. of participants	Which?	Why?
Group (n = 30)	2	One-to-one (in both cases)	Not stated (in either case)
One-to-one (n = 15)	0	-	-
Individual (n = 15)	1	Group	To get more speaking practice

No significant difference was found between modes in the numbers of learners who said they would prefer to study in a different mode, and the low figures indicate that participants in all three modes were happy with their choice of mode. Only three of the 60 participants – one individual learner and two group learners – stated that they would prefer to be studying in a different mode. Individual learner Imogen stated on her questionnaire that she would rather be in a group class in order to have more speaking practice. In her interview she elaborated on this response, but concluded that there was a specific reason – lack of time – that meant she could not attend group classes:

Me:	On the questionnaire you say you would prefer to be in a group class, so you can have more speaking practice. Can you tell me more about that?
Imogen:	Yes, it's logical no? … I, when I study alone I cannot speaking, have speaking practice with the other people, so sometime I prefer that I, I be in a group.
Me:	OK. Why don't you change to a group class?
Imogen:	Is not possible for me because I, because of my studies in the university, I do not have time

The two group learners who on the questionnaire expressed a preference for a different mode said in their interviews that they would prefer to be in either a one-to-one or a smaller group class. Gilberto identified the possibility of personalised error correction as his main reason for this:

Me	Why do you prefer a very small group compared to a big group like this?
Gilberto	Well this is not a very big group
Me	Well no, but it's bigger than
Gilberto	Yeah, why?
Me	Hm
Gilberto	Because the teacher can be more concentrating on your work on what are your wrong or what are with your spelling or and in that case [my teacher] has er twelve, twelve people to correct and it's more difficult

The other group learner who expressed a preference for a different mode, Giodarno, also alluded to more individualised attention from the teacher, but recognised that the higher price of one-to-one classes represented an obstacle:

Me	You say here you would prefer to be a in a one-to-one class. Why is that?
Giordano	Well, I like this class
Me	Sure
Giordano	But I, sometimes I think… it is in my opinion, better, have the correction of the teacher just, only for you, because he, he help you to improve your mistakes
Me	So, do you want to change to a one-to-one class?
Giordano	Maybe… maybe one day… but is expensive, no?

These responses lend support to the idea that learners have specific practical reasons for choosing their mode, and are happy to continue in that mode.

3.4.4   Language Level. I was able to reasonably assume that all participants had a similar level of English at the time data collection began, as all participants had been studying in an upper-intermediate (Common European Framework B2 level) general English course in their respective modes for seven months. Institutional placement test scores for new students had placed them at a high B1 (intermediate) level, and participants who had previously studied at the language school had passed a B1 course. Furthermore, all students had achieved marks between 70 and 90% on an institutional progress test taken after five months of study.

3.5   Course Content and Duration

All participants had been exposed to the same course content for the same amount of time at the moment data collection began, as participants used the same institutionally-produced course materials regardless of their mode of study. Online learners accessed these materials at home through a webpage; classroom learners used a tablet connected to WiFi or paper print-outs. Group and one-to-one learners came to the school for three hours per week, while online learners were recommended to spend three hours per week with their materials.

3.6   Teachers

The group and one-to-one teachers were CELTA-qualified EFL instructors with at least three years' experience teaching at B2 level using a communicative approach. In group mode, since the maximum class size at the school was 12, the 30 participants were distributed between four group classes, containing ten, eight, six and six students respectively. These four classes were taught by four different teachers. While differences between these teachers may have impacted on learners' exposure to and practice of L2 up to the time of data collection, they do not represent a variable in the study because group teachers were asked not to intervene in pairwork during data collection itself.

Regarding one-to-one mode, three teachers, who had five one-to-one students each, participated in the study in order for me to collect data from 15 one-to-one learners, as no single teacher had 15 one-to-one classes simultaneously in any school year.   While it is important to acknowledge that the differences that may exist between these three teachers represent a potential variable in the study, this limitation can also be considered an opportunity to avoid the skewing of results in any one direction, which may have occurred if a single teacher had been observed.

3.7   Ethical Consent

I submitted an application (Appendix 4) and received ethical consent from Lancaster University (Appendix 5) and my institution. Participants were informed by way of a Participant Information Sheet (Appendix 6) of their ethical rights, in both English and Spanish, such as their right to anonymity and right to withdraw, and signed a Consent Form (also contained within Appendix 6).

The Participant Information Sheet indicated my position as Director within the organization. That I have a position of authority within the school raises potential ethical concerns relating to power and true consent, which I attempted to address on the sheet by reassuring participants that I have no responsibility in the school for their progress, such as marking exams or awarding grades. They could therefore be sure that their decision to participate, or otherwise, would have no repercussions on their academic progress.

To contribute to the ecological validity of the study, I asked teachers of group and one-to-one classes (in the individual online mode no teachers were involved) if I could enter their intact classrooms in order to collect data. In group mode, teachers played no role in the tasks recorded as all interaction was student-student. In the one-to-one mode, teachers would fulfil the role of interlocutor in the tasks, that is, the role that a research assistant would fulfil in a lab-based study. In the one-to-one mode, teachers' dual roles as teacher and interlocutor created a potential ethical issue, but I did not ask teachers for written ethical consent, as I did not view them as participants in the study but rather interlocutors. This decision was approved by the University Ethics Board.

My position as teachers' line manager naturally meant that there were ethical concerns relating to teachers' decisions to be involved, or otherwise, in my study. I talked to all the teachers with classes at B2 level about my research, and reassured them that their involvement was entirely voluntary and that my role as their manager should not affect in any way their choice. I offered to provide those who wanted to be involved a copy of the thesis, once completed. Nobody participated under duress, and some teachers decided not to take part. I collected data from the first four group teachers and first three one-to-one teachers who volunteered to participate, and I interpreted their choice to participate voluntarily as verbal consent.

3.8   Pre-task Modelling

I showed participants a model of task completion before they began to perform the tasks themselves, as research findings indicate that individual learners may encounter difficulties producing think-aloud protocols if these are not modelled (e.g. Kim 2008). I emailed online participants a link to a short video I had produced of a learner thinking aloud as she corrected a text (not the same text used in my study), which served as a model for individual online participants. Because pre-task modelling can positively impact the number of LREs produced (LaPierre 1994; Kim & McDonough 2011) I showed group participants a short video of two learners completing a passage editing task, and one-to-one participants a video of a teacher and a learner doing a task together, to conserve equality between the three conditions.

3.9   Tasks

There follows a description of the two tasks designed for the main and pilot studies, with analysis of key design features, a rationale for their selection, and a summary of task administration.

I employed two tasks in the main study, rather than one, because the delivery modes under investigation offer learners a range of task types, and I wanted the tasks in the study to represent more than one typical classroom activity. Furthermore, I wanted to gain a fuller picture by which to compare modes, and, taking into consideration the evidence that task type affects LRE production, I did not want to inadvertently create bias by using one task only. As discussed in Chapter II: Literature Review, Storch's (1998) comparison of LREs produced by learners completing four tasks (multiple choice, cloze, text reconstruction and composition) showed the composition task to produce significantly fewer LREs, although it generated elaboration of ideas and planning. Storch (2013) noted that her 1998 finding is representative of other task comparison studies: in general, meaning-focussed tasks, in which attention to form is incidental and usually occurs when learners encounter a difficulty, generate fewer LREs than language-focussed tasks, which draw attention to pre-determined language forms. Furthermore, LREs in meaning-focussed tasks tend to be lexical rather than grammatical, and more are correctly resolved, since they generally arise from gaps in learners' language that learners are able to notice, rather than seeded forms. Solutions therefore tend to be within participants' linguistic capabilities.

3.9.1   Passage Editing. As discussed in Chapter II: Literature Review, passage editing is an example of what Storch (2013) terms a language-focussed task, and can also be considered an example of Ellis' (2009) focussed tasks, which are communicative tasks that provide practice in specific grammatical or lexical features. In a focussed task, target linguistic features are hidden (Ellis 2009); this marks a difference from a situational grammar exercise (for example drills, multiple choice, and cloze) in which the language point is explicit. Similarly, the task is an example of Willis' (2004) simulation activities, which contain language that looks realistic but focus on practice of particular forms. I chose passage editing for the present study as it has been claimed to draw learners' attention to a range of language forms (Storch

1997) and lead learners to discuss and reflect on language choices and test hypotheses (García Mayo 2002b).

The passage editing task used in the main study was the revised task (Appendix 2) used previously in the second pilot. It consisted of an email to a university admissions officer, written in informal language as opposed to a more appropriate formal register. Learners in their course of study had been exposed to differences between formal and informal emails, and had practised correcting inappropriacies in lexis, ellipsis, use of exclamation marks and capitalisations for emphasis. The passage editing task would therefore be familiar to participants.

I seeded the passage with the 30 errors / inappropriacies detailed in Table 4, above, which related to forms studied in the course and also errors that a sample of B2 learners had produced in recent written work. By following the same approach in the main study as in the second pilot, that is, by seeding the task with learners' errors as well as course-specific forms, the task provided a context for languaging forms with which B2 learners typically encountered difficulties. This contributed to both the ecological validity of the study and the usefulness of the task to learners.

The teachers of the group and one-to-one classes gave participants the passage editing task on a printed sheet of paper. I decided to present the task on printed paper rather than digitally on a tablet because it eliminated the risk of system problems, because the students had not previously used Word to mark-up texts in class, and because paper was commonly used in class. I emailed this same task as a Word document to the online participants, telling them they could correct it in Word and email it back to me, or print it, correct it by hand, scan it, and email it back. To conserve ecological validity, I felt it was important to allow participants to complete the tasks in the way with which they felt most comfortable.

Online participants recorded themselves, using their mobile phone, thinking aloud while they did the task, and emailed me both the recording and the resulting corrected text. Participants in group and one-to-one modes talked together to complete the task, marking their corrections on the paper and recording their dialogues using an mp3 recorder provided by me. No time limit was set for the task.

Participants were not instructed either way regarding whether to complete the tasks in L1 or L2. This was in accordance with Vygotsky's prioritisation of meaning over form: "it is the meaning of the sign, rather than its externalized formal properties, that is key to self-regulation" (Lantolf 2006: 74). If participants are made to talk through tasks in L2 alone, then the task of languaging in L2 may become a secondary aim of the talk, and language may not be able to fulfil its purpose as a problem-solving tool (Lantolf 2006). This view is supported by results from Swain & Lapkin (1998), where learners sometimes switched to L1 to complete LREs, a phenomenon attributed by Lantolf (2006) to

> "the psychological status of the L2: although it might be used for fluent and proficient social speech, the L2 … seems to take up a sufficient amount of a speaker's attention so that it cannot fully serve to mediate cognition" (p. 74).

3.9.2   Written Composition.   The written composition task, an example of a meaning-focussed task (Storch 2013), resembles Ellis' (2009) unfocussed tasks, which provide general communicative language practice without focussing on a specific linguistic feature, and also Willis' (2004) replication activities, which replicate real world communication insofar as language users decide what to communicate. Written compositions, when produced collaboratively, are effective at eliciting metatalk, since they are communication-focussed but provide opportunities for FonF (Swain & Lapkin 1995).

Teachers of one-to-one and group classes gave participants the written composition task (Appendix 7) printed on paper. The topic had been studied recently in the course material. Participants in student-student and student-teacher dyads produced the composition collaboratively, writing it onto a single piece of paper, and their dialogue was recorded using mp3 recorders. Individual online participants wrote alone, either by hand or on their computer, thinking out loud and recording their vocalised thoughts with their mobile phone, and then emailed me the written composition and audio recording. Again, no time limit was set for this task and there was no requirement made regarding the use of L1 or L2.

3.10   Think-Aloud Protocols

3.10.1 Overview.   The present study's design involved learners in the individual online mode thinking aloud as they performed tasks.   Think-aloud protocols, a subset of introspective methodologies, are concurrent or online verbal reports produced by participants as they perform a task (Gass & Mackey 2000; Bowles 2010).   Also referred to as self-revelation procedures (Cohen 1998) and talk-alouds (Shavelson, Webb & Burstein 1986), they require participants to say out loud what they are thinking at the same time as they complete the task.

The theoretical assumption underlying verbal reports is that internal thought processes can be observed in the same way as external processes can be observed, and humans are able to access and verbalise these processes.   The data obtained from think-aloud protocols provide insights into students' reasoning in a way that analysing the finished product (such as a learner's test results or a piece of learner's writing) may not.   Two learners may produce the same task solution, but analysing this response does not necessarily reveal the thought processes that each learner employed to arrive at the solution.

3.10.2 Potential Limitations.   The assumption that internal cognitive processes can be observed and measured has been challenged, for example by Selinker (1974), Nisbett & Wilson (1977), and Seliger (1983), who argued that humans, as sense-making beings, tend to create explanations for phenomena, whether those explanations can be justified or not.   While such objections are now rather old, they imply that results from verbal reports containing explanations or justifications, referred to by Bowles (2010) as metacognitive verbal reports and Ericsson and Simon (1993) as Type 2 verbalisations, need to be interpreted with caution.   Such metacognitive reports differ, however, from the verbalisations of thoughts *per se* requested in the present study, where learners were asked to say aloud exactly what they were thinking, without any necessary explanation or justification (although learners may of course choose to explain or justify) – this latter type of report is referred to as non-metacognitive (Bowles 2010) or Type 1 (Ericsson and Simon 1993).

Arguments exist (e.g. Smagorinsky 1998) that the use of think-aloud protocols may be inconsistent with a sociocultural research framework. While cognitivist SLA researchers working from an information processing perspective of human cognition, such as Ericsson & Simon (1993), see the act of speech as a way of "dumping" thought once it has occurred, and may argue that think-alouds can accurately reflect thought without altering it, researchers working within SCT, such as Swain (2006), propose that think-alouds have the potential to alter the same cognitive processes they aim to observe. If, as Vygotsky proposes, talking about language, tasks and materials mediates the internalization of knowledge, then the act of verbalising itself alters cognition (Bowles 2010). Vygotsky's position is that speech is not solely expressive: "speech does not merely serve as the expression of developed thought. Thought is restructured as it is transformed in speech. It is not expressed but completed in the word" (1987: 150). It is therefore important to consider the potential impact of the verbal protocol on the language that individual learners produce. Ellis (2001) and Jourdenais (2001) refer to the potential for concurrent verbal reports to alter thought processes as reactivity: the act of verbalising is reactive to the task at hand, and constitutes an additional task that may alter the cognitive processes taking place to complete the main task.

The effect of think-aloud protocols on thought processes has been investigated from a variety of perspectives. Ericsson and Simon (1993, 1998), for example, synthesised a number of studies that investigated the reactivity of non-metacognitive think-alouds compared to silent controls while participants performed decision-making and problem-solving tasks. They proposed that while the act of verbalising slows processing time (latency), metacognitive reports are more likely than non-metacognitive reports to be reactive. While the majority of studies they review are non-linguistic, a separate meta-analysis (Bowles 2010) of fourteen reactivity studies involving verbal tasks from both SLA and cognitive psychology found that reactivity may be task-dependent: in some tasks, such as reading comprehension, the effect of thinking aloud may be facilitative, a finding supported by Swain, Lapkin, Knouzi, Suzuki & Brooks (2009); and in others, detrimental. However, the effect size on accurate task completion calculated by Bowles in her meta-analysis is small – generally less than or equal to .05 – suggesting a non-significant difference between think-aloud participants and silent control participants.

A limitation in both meta-analyses cited above, however, is the assumption that "accuracy" signifies non-reactivity. If tasks are completed equally as accurately when done silently or as a think-aloud, the think-aloud is deemed to be non-reactive. However, as discussed above, even when the product of the task is accurate, the cognitive processes leading to that successful completion may differ between individuals. Furthermore, in a language teaching context where many tasks (including the passage editing and written composition tasks in the present study) are divergent – there is no single correct solution – measuring accuracy of task completion and identifying reactivity is problematic.

A further limitation of think-alouds in adult learning contexts has been identified by Lantolf (2006), who highlighted that adults participating in L2 research may be more self-aware than children, and may therefore vocalise less inner speech.

3.10.3 **Alternatives to Think-Aloud Protocols.** Despite the potential limitations of thinks alouds, I still chose to employ these over stimulated recalls. Stimulated recalls are referred to by Gass & Mackey (2000) as postprocess oral observation, and by Shavelson, Webb & Burstein (1986) as prompted interviews, and take place after participants perform a task, requiring them to watch a video or hear a recording of themselves completing the task while describing what they were thinking. The principal drawback of stimulated recalls is memory decay (Bowles 2010), an erosion over time of participants' ability to accurately verbalise what they were thinking. This threat to internal validity has been referred to as an issue of veridicality (Bowles 2010). Gass & Mackey (2000) recognise that in stimulated recall, despite the presence of a recall support system in the form of an audio or video recording, delays between task and recall have a potential impact on internal validity; they also claim that such delays increase the likelihood of acquiescence responses or retrospective sense-making.

One way of avoiding issues of veridicality may be the employment of "immediate recall" (Gutiérrez 2013), a think-aloud in which the researcher, if s/he believes the participant is not verbalising, interrupts to provide an auditory prompt such as a knock on the desk (Philp 2003) or a spoken request (Gutiérrez 2013). However, given the possible impact of the researcher's presence on the LREs

produced, indicated in my first pilot study, I chose to use unprompted think aloud over stimulated or immediate recall.

3.11   Post-test

In order to investigate possible associations between LREs and learning of focal forms, I designed a post-test (Appendix 8) that took the form of an isomorphic task, defined by Storch (1999: 365) as a task "on the same theme, of the same genre, of approximately the same length" as the passage editing task learners had completed, and which would draw learners' attention to the same number of similar items. In other words, the task I devised was very similar in content and structure to the revised passage editing task that learners has already worked with. It was an informal email which would have been more appropriately composed in formal register, and it also contained 30 errors, of the same types as in the first task. These errors are detailed in Table 8, alongside their corresponding errors in the revised passage editing task, for reference.

Table 8
Errors seeded in the post-test

Language focus	Type of error	Errors seeded in post-test	Corresponding errors seeded in revised passage editing task
Lexis A total of 6 lexical errors	The use of Spanish false friend "formation" instead of "training"	1, 2) formation (x2)	1, 2) formation (x2)
	Preposition of place	3) on England 4) at Spain	3) on the city 4) at my country
	Verb + preposition collocations	5) consist in	5) depend of
	Make versus do	6) make an English test	6) making leisure activities
Grammar A total of 6 grammatical errors	Modal verbs	1) I have seen that we would make an English test 2) I should give you a buzz if I have any questions	1) if I would come to study with you 2) how much time shall I have to pay
	Subject-verb agreement	3) there is things 4) there are a phone number	3) there were something 4) are there a chance?
	Use of zero article for speaking generally Use of zero article for languages	5) The university studies 6) The languages	5) The language learning 6) The Russian
Mechanics A total of 6 mechanical errors	Spelling: use of single instead of double consonants	1) enginnering 2) acredit	1) imposible 2) aproximate
	Run-on sentences using commas instead of periods, semi-colons or connectors	3) …on England, thanks a million… 4) … like Enginnering, for the languages…	3) … BRILLIANT, I'm really looking forward… 4) … languages too, at my country…
	Non-capitalisation of countries and nationalities	5) spain 6) English	5) spain 6) uk
Discourse A total of 12 inappropriacies in register	Formal versus informal expressions to be avoided in formal letters / emails	1) Hi 2) Just + *ing* 3) MILLION (choice of informal lexis) 4) MILLION (capitalization) 5) Cool 6) BRILLIANT (choice of informal lexis) 7) BRILLIANT (capitalisation) 8) Give you a buzz 9) Any chance 10) Bye for now 11) See you soon 12) Any recommendations?	1) Hi 2) Just + *ing* 3) MILLION (choice of informal lexis) 4) MILLION (capitalization) 5) Cool 6) BRILLIANT (choice of informal lexis) 7) BRILLIANT (capitalisation) 8) Give you a buzz 9) Any chance 10) Bye for now 11) See you soon 12) Any recommendations?

I employed an isomorphic task to attempt to trace possible associations between languaging and learning of topicalised forms, based on the theoretical assumption that if participants had languaged a form in the first task and had either learned something new or consolidated existing knowledge in the episode, they would be able to recognise and correct a similar or identical form in the post-test.

This approach and its theoretical assumption are not without their limitations. That errors in the post-test are not salient, as they might be in a discrete item test, means learners may simply not see them, even if learners had languaged similar or identical forms in the task. Furthermore, it is plausible that learners who were able to correct a form in the first task would not necessarily correct a similar form in the post test-test: for example, correction of the spelling error in "enginneering" does not necessarily transfer to a demonstrated ability to add a consonant to "imposible". Such limitations are discussed further in Chapter VI: Discussion and Conclusions of the present thesis. It should be stressed, however, that in this study the post-test provided only one measure of learning, alongside analysis of microgenetic development observable within LREs. The quantitative analysis of test results together with qualitative microgenetic analysis of episodes provides a thick description of learning processes, which adds to the robustness of the claims.

I employed the isomorphic task as a next-best practical alternative to a tailor-made test, which I had originally planned to use. Tailor-made or *a-posteriori* test items developed after LREs have occurred, and which test the language items that arise in LREs rather than the seeded forms, would have strengthened claims of learning when learners engage in LREs about non-seeded forms (Storch 2013). Participants in Kuiken & Vedder's (2002) study, for example, generally avoided using targeted passive structures in their reconstructed texts, and very few of the LREs in Swain & Lapkin (2001) focussed on items included in a pre-test, even when the pre-test itself assessed items learners had discussed during a pilot. A tailor-made test was employed by Williams (2001), who created items that reflected the nature of each LRE. Similarly, LaPierre (1994) designed dyad-specific items of different formats, including dual- or multiple-choice, gap-fill and open-ended.

However, having considered the practical and theoretical difficulties inherent in creating valid and reliable test items for each of the LREs produced by the 60 participants in passage editing (which would end up totalling 1000 episodes) within the one-week time interval between the task and the post-test, I decided instead to create the isomorphic task, an approach that had also been adopted by Storch (1999). In effect, the approach I took to analysing post-test responses – that is, I only measured learning of forms that had been languaged in the task, which differed between participants – lent the instrument an element of "tailor-made", as analysis was case-specific.

The post-test was administered to all participants one week after the first passage editing task. The post-test was presented on paper by teachers to the group and one-to-one participants, who completed the test individually. I emailed the same test to online participants, who either corrected the text in Word and emailed it back to me, or printed it, corrected it by hand, scanned it and emailed it back to me.

3.12 Questionnaire

The questionnaire (Appendix 3) discussed above was administered in week 4, after learners had completed both tasks and the post-test.

3.13 Interviews

I interviewed students in person (group and one-to-one participants) or via Skype (online participants) in order to further explore learners' experience of completing the tasks and to elaborate on any questionnaire responses I felt would be worth examining in greater depth. The questions in the interview included a) the elicitation of beliefs about delivery modes and task in general, which may be considered "perspective" (Richards 2009: 188) or "opinion and values" (Patton 2002: 348-351) questions, and b) probing of learners' feelings about the tasks, which may be considered "event" questions (Richards 2009: 188) or "feeling / sensory" questions (Patton 2002: 348-351). The latter invited reaction, interpretation and explanation.

Interviews added a dimension to my multimethod approach by helping build up a thicker description of the issues under examination (Edley & Litosseliti 2010). They were semi-structured as they followed an interview guide (Appendix 9) that

formed the basis of the procedure. This allowed for a greater degree of structure than open interviews, the data from which may have been more difficult to analyse and compare between participants, but which was less constrictive than a rigidly structured interview, which may have risked lacking richness and depth.

Interviews were conducted in participants' L2 (English), as all participants were studying at B2 level, but I also speak their L1, meaning they were able to code-switch when necessary.

3.14 Data Analysis Methods

3.14.1 Transcription. I transcribed the recordings from the main and pilot studies, listening to the audio on headphones, using a foot pedal to stop and restart audio, and typing into *Word.* I used transcription conventions (Appendix 10) adapted from Jefferson (2004).

3.14.2 LRE Identification. Following Swain's (1998) definition, any part of the participant's speech in which s/he talks about an aspect of the language s/he is producing, including self-or other-correction, is identified as an LRE. Correction of the text is considered a form of other correction and therefore constitutes an LRE. Reading out loud is not considered an LRE, since there is no talk about language; also not classed as LREs are comments such as "this is OK" or "this is fine", without reference to any particular form, as there is no discussion about language, only a judgement.

While it is debatable where LREs start and end, this is less important in this research because my interest is not in measures of LRE length (or accuracy or fluency), but rather their focus, resolution and evidence of engagement. Thus, no LRE start or end points are indicated in the transcripts.

Some LREs are interwoven or "tangled" (Fortune & Thorp 2001), that is, more than one form is discussed concurrently. In the following example, group learners Gina and Giordano mix a discourse – register LRE about the formality of *can* and *may* with a grammar LRE relating to pronouns *which*, *that* or *what*.

| Gina | Yes… mmm… "which reminds me, can you give me an approximate cost of the courses?" … hm |
| Giordano | "Which reminds me" |

Gina	Or "That reminds me?	Because it's the grammar?	
Giordano		Yes, is, ah, I don't know…	
Gina	It's kind of, direct and		
Giordano	unformal?		
Gina	it's too much, direct		
Giordano	I, I think if we change which for what, what reminds me		
Gina	And may…	can	
Giordano		But I'm not I'm not very	
Gina	and can for may, because it's more polite		
Giordano	Or could? May I?		
Gina	yes …		
Giordano	erm… and this?	What	
Gina		what reminds me	
Giordano	what		
Gina	It's correct, it's not which reminds me		
Giordano	OK without this …	expression	
Gina		with, yes, maybe	
	Just can you give me an information		

The above exchange is therefore coded as two LREs, in order to reflect the two different foci.

3.14.3 Types of LREs. I entered transcripts into *Excel*, where I coded LREs for linguistic focus, resolution and engagement. Appendix 11 contains the categories and Appendix 12 contains an example transcript with codings.

The following example from the first pilot illustrates a coding decision. Pedro identifies the structurally incorrect "we'll getting in", and suggests "we will get" as an alternative, so the focus of this episode is grammar, subfocus tense / mood / aspect. While the form suggested "we will get" is structurally correct, the use of *will + infinitive* in a context about future plans is inappropriate (Swan 1995: 210) so the episode is incorrectly resolved. Pedro does not elaborate on his correction, for example by giving a reason for making the change, so the episode is characterised by limited engagement.

> we'll getting in one, in on the evening of Sunday 11th of 11th November",
> so first of all we'll, I would say we will get

When I began coding LREs in the main study, I employed the same categories I had used as in the first pilot.   However, after transcribing the first 20 recordings, I revised some categories in response to the emerging LREs. Firstly, I created a new

subcategory of discourse LRE: discourse – register. This was to differentiate between lexical items languaged solely in terms of word choice (coded as a lexical LRE) and those languaged in terms of formality of register (coded as a discourse – register LRE). This is important in many of the LREs observed, given the stylistic focus of the passage editing task. I also moved spelling from the lexis to the mechanics category, as spelling is related to the mechanical formation of words, rather than the word choice focus that characterises most lexis LREs. I also removed some categories employed in the pilot that rarely or never occurred.

3.14.3.1. Focus and sub-focus. The focus of each LRE is coded as lexis, grammar, mechanics or discourse. Within grammar, mechanics and discourse categories, LREs are further categorised for subfocus, as indicated in the table in Appendix 11.

Regarding contractions, sometimes contracted forms were languaged in terms of a preference for uncontracted forms in formal style, but these were still coded as mechanics-contractions rather than register-discourse, in order to differentiate them from LREs about the register of lexis.

Within discourse, text cohesion subfoci include LREs relating to avoiding repetition in writing, as seen in this one-to-one LRE between Onora and her teacher in the composition task:

Onora	How much can I write, do I have to write how many
Teacher	Er…
Onora	OK so
Teacher	Maybe if you like this, like the same amount again would be enough I think…
Onora	I share, because I share, I already wrote support, so I… I share the idea
Teacher	Uh hum
Onora	Is that good or not, I share the idea?
Teacher	What idea?
Onora	That er it's not allowed any more to smoke in restaurants in bars
Teacher	Ah OK yeah

Text cohesion also includes discussion of how to begin and end a letter, how to compose introductions and conclusions, and paragraphing, for example in this one-to-one LRE between Orlando and his teacher:

Teacher	As er, because it's a letter, how do we begin?
Orlando	Er, how begini er…

Teacher	It's a letter to a newspaper
Orlando	Er I think I have to… to write, first of all I have to write… the person or the name of the person
Teacher	OK, yeah, if we don't know the name of the person in the newspaper we can say Dear Editor,
Orlando	Uh hum
Teacher	That's one way to, to begin, Dear Editor…

It should be noted that coding of linguistic focus sometimes depends not only on the linguistic item itself but on the context in which it is discussed. An LRE about the phrase "just writing" in the passage editing task, for example, is sometimes coded grammar - syntax, if students discuss the necessity of a subject and a verb to begin an affirmative sentence, or other times discourse - register, if students talk about the inappropriacy of ellipsis in a formal letter. Likewise, an LRE about the adjective "cool" in the passage editing task is coded discourse – register if reference is made to formality, but lexical if a preference is simply stated for another word, as in this LRE between Orlando and his teacher:

Orlando	"So it will be very cool"… it's not cool for me… it's funny to study these languages in your university
Teacher	Uh hum

3.14.3.2. Resolution. LREs are also coded as correctly resolved, incorrectly resolved, or unresolved. In some cases it was necessary to refer to learners' written texts in order to determine the correctness of resolutions. For example, group dyad Gualterio and Grisela discuss the spelling of "conscious", but it is not clear from the LRE itself whether it is resolved correctly:

Grisela	But I am conscious
Gualterio	Conscious, conscious, consciously, I'm conscious, consci, consci…
Grisela	Consciously, conscious, I am conscious… I don't know, I think is with T, conscious @
Gualterio	Is OK conscious, conscious
Grisela	I am conscious
Gualterio	Conscious I think without T, no?
Grisela	But I'm conscious, how can I write conscious? With E? With C?
Gualterio	Conscious, C I O U S
Grisela	O U S con-sci-ous, consci
Gualterio	I'm conscious
Grisela	I'm conscious…that… it's… an i, an issue… which, is… dangerous

However, their written text contains the correct spelling, so the LRE is coded as correctly resolved.

3.14.3.3 *Engagement.* LREs are also coded according to whether engagement is elaborate or limited; in dyads, this coding identifies if elaborate engagement is observable in participant 1 only, participant 2 only, both participants, or neither participant (i.e. engagement is limited). Following Storch (2008), limited engagement is operationalised as instances in which a linguistic item is stated without further deliberation, including when, in student-student or student-teacher dayds, there is some phatic utterance such as "OK" or "yeah", but no further evidence of cognitive engagement. Following the educational literature on engagement, LREs are coded as demonstrating elaborate engagement when there is evidence of a metacognitive self-regulation strategy. Such strategies include elaborating on linguistic choices made (Storch 2008; Baralt *et al* 2016), for example by reflecting on language forms, seeking or providing metalinguistic descriptions and / or justifications for these choices; comparing, asking questions and drawing inferences regarding the target language (Svalberg 2009); flexibility in problem solving, for example by generating options from which to choose (Reeve 2012); creating connections, for example by hypothesis testing or generating rules (Weinstein & Mayer 1986); attempting to go further than the requirements of the task (Connell & Wellborn, 1991; Newmann *et al*., 1992; Wehlage *et al*., 1989; Reeve 2012); demonstrating a positive attitude in the face of difficulties (Connell and Wellborn 1991; Baralt *et al* 2016); remaining on task when there were possible distractions (Corno, 1993; Pintrich & De Groot, 1990); and rehearsing and/or summarising items (Corno & Madinach, 1983; Weinstein & Mayer, 1986).

Regarding engagement in mechanics LREs, it should be noted that the presence of metalanguage in learner talk, such as "capital letter", "comma", or "full stop", is not in itself deemed sufficient to indicate the presence of elaborate engagement, as the use of this metalanguage is usually necessary for the identification and / or correction of a mechanics error. This contrasts with the use of metalanguage in a grammatical or lexical LRE, in which a correction is usually made by providing the preferred grammatical or lexical form (e.g. "there is, not there are"), which in itself would constitute limited engagement – optionally followed by some metalanguage relating to the form (e.g. "singular"), which would constitute metalanguage and,

therefore, elaborate engagement. For engagement in mechanics LREs to be elaborate, there needs to be some further deliberation beyond the metalinguistic term e.g. "comma" or "full stop" such as, "we need a full stop as the sentence is too long" (providing a justification), or "a comma is better than a hyphen or a period here" (generating options and choosing one).

While generating options is considered an example of elaborate engagement (Reeve 2012), it should be noted that if only one option is suggested as an alternative to a given form, this is not considered elaborate engagement – it is simply a correction. To constitute elaborate engagement, a third option needs to be proposed, at least. In this excerpt from Guadalupe and Grace's passage editing task, one alternative form, *in*, is considered alongside the existing form at, and so the episode demonstrates only limited engagement:

Guadalupe	Really yes, OK, "the language learning is really important for students here in Spain, not just English but other languages too, at my country", is in my country no?
Grace	In, at… in, yes
Guadalupe	Write, er yes
Grace	OK

To constitute elaborate engagement, a third form (for example *on*) would need to be proposed.

3.14.3.4. Initiator and Resolver. As I transcribed, I became aware that, following Williams (2001), it would be important for the subsequent analysis to know who initiated and resolved each LRE. I therefore indicated whether each LRE is initiated by participant 1 (P1) or participant 2 (P2, or teacher (T) in the case of one-to-one dyads). I also indicated whether the LRE is resolved by P1, P2/T, both P1 and P2/T collaboratively, or by no-one (i.e. the LRE was left unresolved).

Resolution is coded as collaborative P1+P2/T when both participants contribute something new towards the resolution of the LRE by making suggestions or evaluating the appropriateness of forms. An example in which both participants contribute lexical items that lead to a correct collaborative resolution is Glenda and Godiva, deciding on an appropriate expression during the passage editing task:

Godiva	How much is the total, fine yeah…
Glenda	Cost?

Godiva	Cost, yeah…
Glenda	Are you OK with that? No?...
Godiva	How much is the, would would it, cost, would it cost?
Glenda	How much
Godiva	In total
Glenda	Ah that's good, how much would it cost in total
Godiva	Would
Glenda	Would it cost
Godiva	In, total…

While the final correct form may be provided by one participant or the other (in this case, Glenda), if both are involved in the decision making process, this is coded as collaborative resolution.

In contrast, if one participant states a preferred form and the interlocutor simply repeats the previous utterance or makes a phatic response or agreement, this is not coded as collaborative, as nothing new is added to the resolution. In this one-to-one example, for instance, the resolution involves a dialogue between the teacher and Olivia, yet Olivia does not contribute anything new to the resolution, and so it is coded as resolved by the teacher:

Teacher	Yeah you're doing a good job, this here complain is the verb, the noun? Do you know how to spell the noun?
Olivia	Complaining?
Teacher	It's complaint, with T yeah, the verb I complain, but my complaint
Olivia	My complaint
Teacher	Because this is the subject then here you don't need to repeat the subject so you don't need it
Olivia	OK
Teacher	Only is OK
Olivia	Uh hum
Teacher	So my complaint is
Olivia	Only

If an LRE is resolved simultaneously by both participants speaking over each other, this is coded as collaborative resolution, as in this example:

Giordano	"I'm sure the formation will be brilliant … I'm really looking forward to studying in the UK, UK", capital letters
Gina	capital letters, And "I'm sure the formation will be brilliant"

If one participant seems to know the answer but seeks confirmation from the interlocutor regarding the correctness of a form, as is often the case in the one-to-one context, this is classed as collaborative resolution, as the teacher's confirmation

constitutes part of the resolution. This is exemplified in this extract from Onora's passage editing exchange with her teacher, in which she corrects *there were* + singular noun:

Onora	Are also, a priority for me… there was something, huh?
Teacher	OK yeah
Onora	Not there were… there was

Conversely, if a participant does not appear to know the answer, asks a question, and the other participant answers it, this is coded as resolution by the person answering it (i.e. not collaborative resolution), as in this example from Ofelia and her teacher:

Ofelia	Would I have to pay or would I need?
Teacher	The two, the two are possible, need or have…

3.14.3.5   *Microgenetic development (MGD).*   I indicated the occasions where, based on a qualitative analysis of the protocol alone (i.e. without consulting the post-test), I could see evidence of some change in one or both of the participants' language knowledge, within the duration of the task.   In this excerpt from group learners Giuliana and Guillermo, Guillermo's ability to produce in written form the correct spelling of "kindest regards" appears to undergo development, supported by Giuliana and evidenced in Guillermo's uptake, and so this is coded MGD:

Giuliana	Kindest regards, kindest regards
Guillermo	Kind
Giuliana	Kindest
Guillermo	Kind, est
Giuliana	Regards, capital letters, and t, t
Guillermo	Kindest… kindest regards, and the full name now

To be coded MGD, there has to be some indication of uptake within the interaction itself, beyond a phatic response such as "Oh", in the form of a more extended response or further use of the item.   In the following example, Ofelia and her teacher participate in an episode about the construction looking *forward to + gerund*, in which the teacher explains the correct form to Ofelia, who wanted to use the infinitive instead of the gerund.   Within the episode itself there are only phatic responses by the learner, so no MGD is observed here:

Ofelia	OK… to study without the I N G I'm looking forward
Teacher	OK yeah, with this expression look forward to, here to is a preposition, OK, so I look forward to, the party, I look forward to university, so to is a preposition, it's not part of an infinitive, so this in fact is correct
Ofelia	Oh
Teacher	So I look forward to studying because here studying we have to use the gerund because it's like it's like a noun, we're using the verb like a noun, OK
Ofelia	OK

However, later in the transcript there is evidence of spontaneous learner production of the correct gerund form:

Teacher	I agree yeah , so I'm looking forward… I'm looking forward to…
Ofelia	Erm… to studying
Teacher	Good
Ofelia	To studying in your university
Teacher	Great… excellent yeah and you've got the correct form there studying, in that expression

This spontaneous use constituted uptake, and the episode is therefore coded as demonstrating MGD.

3.14.4 Test Responses. Each participant's post-test (the isomorphic passage editing task) was compared to the transcript of his or her original passage editing task. I marked test corrections against the corresponding LREs in the transcript, if there had been any, according to the system described in Table 9. Appendix 13 contains an example of a post-test marked using this system.

In the passage editing task, learners sometimes participated in LREs about forms that were not seeded as one of the 30 errors, such as contractions, for example "it'll be really cool", "I'm really looking forward to"; whether "Andy" should be changed to a full name and surname; whether "university" needed a capital U, and so on. The post-test also contains many of these same forms, which, as in the task, were not seeded as one of the 30 errors, but if learners languaged the forms in the task, then the corresponding forms in the task become test items, as I consider them opportunities for learning from LREs to be demonstrated.

3.14.5 Quantitative Analytical Methods. Data for each of the dependent variables (number of LREs; focus; sub-focus; resolution; engagement; test scores) were plotted against the two independent variables (mode; task) on Q-Q plots to determine whether distributions were normal. A small number of the dependent

variable data sets, such as number of LREs, fell approximately on a straight line in the Q-Q plot, from which I interpreted that the data was approximately normally distributed. For most dependent variables, however, data did not appear to be normally distributed.

Table 9

Codes for labelling LREs in transcripts according to test responses

Code	TI		AT		Item resolution					NON
					RA	RD	RN	RP		NON
Description	Test Items		Items Attempted		Item resolved in agreement with LRE	Item resolved in disagreement with LRE	Item resolved when LRE had not been resolved	Item partially resolved		Non-LRE test items
Criterion	How many **test items** (TIs) related to this LRE? 0, 1 or 2?* If this figure is 1 or 2, go to next column. If this figure is 0, stop.	→	How many of the TIs were **attempted**? 0, 1 or 2? If this figure is 1 or 2, go to next column. If this figure is 0, stop.	→	How many of the attempted TIs were resolved in **agreement** with the resolution of the LRE? 0, 1 or 2?	How many of the attempted TIs were resolved in **disagreement** with the resolution of the LRE? 0, 1 or 2?	How many of the attempted TIs were resolved when the LRE had been left **unresolved**? 0, 1 or 2?	How many of the attempted TIs were only partially resolved i.e. underlined or circled, but not corrected? 0, 1 or 2?	→	How many attempts were there to correct forms that had not been the focus of LREs?

* In order not to misrepresent the total number of test responses, if there are two test items for a particular form, and two or more LREs in the transcript dealing with the same form, test attempts and resolutions are only noted alongside the first LRE. However, when there is more than one LRE focused on the same form, the LREs themselves are always counted as separate, since despite having the same linguistic focus, their resolution, initiator, resolver and engagement may differ between the various LREs. For example, the lexical error "formation" has two related test items. If learners produce two LREs relating to the word "formation", these are counted as two separate LREs, as they potentially differ in their resolution and engagement. However, test responses are only recorded next to their first LRE about "formation", not the second.

The assumption of normally distributed data, or otherwise, informed the subsequent statistical analysis. Where data appeared normally distributed, I ran a one-way ANOVA to determine whether the mean responses in the three modes differed significantly at the $p < .05$ significance level. Where data did not appear to be normally distributed, I performed a Kruskal-Wallis H test instead of ANOVA. Where the ANOVA or Kruskal- Wallis test indicated that the mean response differed significantly at the $p < .05$ level, I performed unpaired t-tests (for normally distributed data) or Mann-Whitney U tests (for non-normally distributed data) to determine whether differences between pairs of modes (group - one-to-one; group - individual; one-to-one - individual) were significant. Tests were two-tailed since there was no directional hypothesis, and unpaired since data for each condition came from different groups, given the study's between-subjects design.

In order to mitigate the multiplication of risk caused by repeated t- and U tests when pairwise comparisons were made between modes, a Bonferroni correction was applied of α/m, that is the alpha level (.05) divided by the number of hypotheses (two), resulting in and alpha level of .025 for t- and U tests.

Spearman's correlation tests were run to assess the relationships between correct LRE resolution, engagement and test responses within each mode and task. Spearman's, rather than Pearson's, correlation tests were run because of the non-normal nature of the majority of data distributions.

Results from statistical analyses are reported to two significant figures.

CHAPTER IV: RESULTS

4.1   Introduction

In this chapter, quantitative results are presented and compared between group, one-to-one and individual modes in relation to the following:

1) The number, focus and resolution of LREs;
2) Learner engagement in LREs; and
3) Learning of forms topicalised in LREs, in terms of microgenetic development and post-test performance.

Analysis and discussion of this quantitative data, together with microgenetic analysis of qualitative data, are presented in subsequent Chapters V: Analysis and VI: Discussion and Conclusions.

4.2   Number, Focus and Resolution of LREs

4.2.1   Number of LREs in Group, One-to-One and Individual modes.

Table 10 presents the descriptive statistics for numbers of LREs in group, one-to-one and individual modes, for each of the passage editing (PE) and written composition (WC) tasks.

Table 10

Number of LREs in group, one-to-one and individual modes

		LREs	M	SD	Kurtosis	Skew
Passage Editing	Group (n = 15)	406	27.1	7.9	-1.0	0.4
	One-to-one (n = 15)	359	23.9	8.7	-0.1	0.4
	Individual (n = 15)	235	15.7	4.4	3.5	1.6
Written Composition	Group (n = 15)	234	15.6	7.9	0.2	0.4
	One-to-one (n = 15)	172	11.5	6.2	-0.6	0.4
	Individual (n = 15)	129	8.6	4.1	-0.2	0.3

A one-way ANOVA indicated a significant difference between modes in LRE numbers at the $p < .05$ level in Passage Editing (PE), $F(2, 42) = 9.04$, $p = .00054$, and Written Composition (WC), $F(2, 42) = 4.75$, $p = .014$.   In PE, post-hoc comparisons using independent-samples t-tests revealed a significantly higher number of LREs at

the $p < .025$ level in group than individual, $t(28) = 4.48$, $p = .00012$, a significantly higher number in one-to-one than individual, $t(28) = 3.04$, $p = .0050$, but no significant difference between group and one-to-one, $t(28) = 1.03$, $p = .31$. In WC, post-hoc comparisons using independent-samples t-tests revealed a significantly higher number of LREs at the $p < .025$ level in group than individual, $t(28) = 3.04$, $p = .0051$, but no significant differences between group and one-to-one, $t(28) = 1.60$, $p = .12$, or between one-to-one and individual, $t(28) = 1.50$, $p = .15$.

4.2.1.1 Passage editing versus written composition. While task comparison was not one of the main research aims of the present study, I compared the total number of episodes produced in PE with those produced in WC. The independent-samples t-test revealed a significantly higher number of LREs in PE than in WC at the $p < .05$ level, $t(88) = 6.26$, $p = .000010$.

4.2.2 LRE Focus in Group, One-to-One and Individual Modes. Table 11 presents the descriptive statistics for LRE focus in PE and WC tasks, compared between the three modes. The percentages express the proportion of LREs to total LREs in that mode and task.

4.2.2.1 Lexis. A one-way ANOVA revealed no significant difference between modes in proportions of lexical LREs at the $p < .05$ level in PE, $F(2, 42) = 0.011$, $p = .99$, or in WC, $F(2, 42) = 2.9$, $p = .069$.

4.2.2.2 Grammar. In PE, a Kruskal-Wallis H test revealed a significant difference between modes in proportions of grammar LREs at the $p < .05$ level, $\chi^2(2) = 11.7$, $p = .0029$. Post-hoc comparison using the Mann-Whitney U-test revealed a significantly higher proportion of grammar LREs at the $p < .025$ level in group than individual, $U(28) = 37.5$, $z = 3.09$, $p = .0020$, a significantly higher proportion in one-to-one than individual, $U(28) = 47$, $z = 2.70$, $p = .0069$, but no significant difference between group and one-to-one $U(28) = 99$, $z = 0.54$, $p = .59$. In WC, a Kruskal-Wallis H test revealed no significant difference between modes at the $p < .05$ level, $\chi^2(2) = 0.29$, $p = .87$.

Table 11
Focus of LREs in group, one-to-one and individual modes
(percentage of total LREs in that mode and task)*

Lexis		LREs	%*	M	SD
Passage Editing	Group (n = 15)	109	26.8%	7.3	3.6
	One-to-one (n = 15)	107	29.8%	7.1	5.2
	Individual (n = 15)	69	29.4%	4.6	4.4
Written Composition	Group (n = 15)	124	53.0%	8.3	5.2
	One-to-one (n = 15)	76	44.2%	5.1	3.8
	Individual (n = 15)	75	58.1%	5.0	2.6
Grammar					
Passage Editing	Group (n = 15)	105	25.9%	7.0	3.9
	One-to-one (n = 15)	85	23.7%	5.7	3.0
	Individual (n = 15)	35	14.9%	2.3	1.7
Written Composition	Group (n = 15)	40	17.1%	2.7	2.6
	One-to-one (n = 15)	29	16.9%	1.9	1.8
	Individual (n = 15)	24	18.6%	1.6	1.3
Discourse					
Passage Editing	Group (n = 15)	91	22.4%	6.1	2.3
	One-to-one (n = 15)	88	24.5%	5.9	2.6
	Individual (n = 15)	82	34.9%	5.5	2.8
Written Composition	Group (n = 15)	43	18.4%	2.9	2.2
	One-to-one (n = 15)	25	14.5%	1.7	2.0
	Individual (n = 15)	26	20.2%	1.7	1.6
Mechanics					
Passage Editing	Group (n = 15)	101	24.9%	6.7	2.7
	One-to-one (n = 15)	79	22.0%	5.3	2.2
	Individual (n = 15)	49	20.9%	3.3	2.8
Written Composition	Group (n = 15)	27	11.5%	1.8	1.9
	One-to-one (n = 15)	42	24.4%	2.8	1.7
	Individual (n = 15)	4	3.1%	0.3	0.6

4.2.2.3 Discourse. A Kruskal-Wallis H test revealed no significant difference between modes in proportions of discourse LREs at the $p < .05$ level in PE, $\chi^2(2) = 5.28$, $p = .071$, or WC, $\chi^2(2) = 0.39$, $p = .82$.

4.2.2.4 Mechanics. In PE, a Kruskal-Wallis H test revealed no significant difference between modes in proportions of mechanics LREs at the $p < .05$ level, $\chi^2(2) = 0.36$, $p = .84$. In WC, conversely, a Kruskal-Wallis H test revealed a significant difference between modes at the $p < .05$ level, $\chi^2(2) = 19.6$, $p = .00010$. Post-hoc

comparison using the Mann-Whitney U-test revealed a significantly higher proportion of mechanics LREs at the $p < .025$ level in one-to-one than group, U(28) = 42.5, z = 2.88, $p = .0040$, a significantly higher proportion in one-to-one than individual, U(28) = 14, z = 4.06, $p = .000010$, but no significant difference between group and individual, U(28) = 63, z = 2.03, $p = .042$.

4.2.3 LRE Sub-focus in Group, One-to-One and Individual modes. Table 12 presents the descriptive statistics for LRE sub-focus in PE and WC tasks, compared between the three modes.

4.2.3.1 Grammar – Tense. In PE, a Kruskal-Wallis H test revealed a significant difference between modes in proportions of grammar – tense LREs at the $p < .05$ level, $\chi^2(2) = 7.25$, $p = .027$. Post-hoc comparison using the Mann-Whitney U-test revealed a significantly higher proportion in group than one-to-one at the $p < .025$ level, U(28) = 58, z = 2.24, $p = .025$, and a significantly higher proportion in group than individual, U(28) = 56.5, z = 2.30, $p = .021$, but no significant difference between one-to-one and individual U(28) = 98.5, z = 0.56, $p = .58$. In WC, a Kruskal-Wallis H test revealed no significant difference between modes at the $p < .05$ level, $\chi^2(2) = 1.97$, $p = .37$.

4.2.3.2 Grammar – Morphology. Kruskal-Wallis H tests revealed no significant difference between modes in proportions of grammar – morphology LREs at the $p < .05$ level in PE, $\chi^2(2) = 3.92$, $p = .14$, or in WC, $\chi^2(2) = 5.94$, $p = .051$.

4.2.3.3 Grammar – Syntax. In PE, a Kruskal-Wallis H test revealed a significant difference between modes in proportions of grammar – syntax LREs at the $p < .05$ level, $\chi^2(2) = 7.03$, $p = .030$. Post-hoc comparison using the Mann-Whitney U-test revealed no significant difference between group and one-to-one at the $p < .025$ level, U(28) = 87.5, z = 1.02, $p = .31$, or between group and individual, U(28) = 75, z = 1.54, $p = .13$, but a significantly higher proportion in one-to-one than individual, U(28) = 49, z = 2.61, $p = .0091$. In WC, a Kruskal-Wallis H test revealed no significant difference between modes at the $p < .05$ level, $\chi^2(2) = 3.74$, $p = .15$.

Table 12

LRE sub-focus in group, one-to-one and individual modes
(* percentage of total LREs in that mode and task)

Grammar			LREs	% *	M
Tense	Passage Editing	Group (n = 15)	38	9.4%	2.5
		One-to-one (n = 15)	20	5.6%	1.3
		Individual (n = 15)	11	4.7%	0.7
	Written Composition	Group (n = 15)	7	3.0%	0.5
		One-to-one (n = 15)	1	0.6%	0.1
		Individual (n = 15)	7	5.4%	0.5
Morphology	Passage Editing	Group (n = 15)	24	5.9%	1.6
		One-to-one (n = 15)	23	6.4%	1.5
		Individual (n = 15)	10	4.3%	0.7
	Written Composition	Group (n = 15)	27	11.5%	1.8
		One-to-one (n = 15)	14	8.1%	0.9
		Individual (n = 15)	6	4.7%	0.4
Syntax	Passage Editing	Group (n = 15)	43	10.6%	2.9
		One-to-one (n = 15)	42	11.7%	2.8
		Individual (n = 15)	14	6.0%	0.9
	Written Composition	Group (n = 15)	6	2.6%	0.4
		One-to-one (n = 15)	14	8.1%	0.9
		Individual (n = 15)	11	8.5%	0.7
Discourse					
Register	Passage Editing	Group (n = 15)	77	19.0%	5.1
		One-to-one (n = 15)	75	20.9%	5.0
		Individual (n = 15)	68	28.9%	4.5
	Written Composition	Group (n = 15)	5	2.1%	0.3
		One-to-one (n = 15)	1	0.6%	0.1
		Individual (n = 15)	2	1.6%	0.1
Text cohesion	Passage Editing	Group (n = 15)	14	3.4%	0.9
		One-to-one (n = 15)	13	3.6%	0.9
		Individual (n = 15)	14	6.0%	0.9
	Written Composition	Group (n = 15)	38	16.2%	2.5
		One-to-one (n = 15)	24	14.0%	1.6
		Individual (n = 15)	24	18.6%	1.6

Mechanics					
Spelling	Passage Editing	Group (n = 15)	17	4.2%	1.1
		One-to-one (n = 15)	20	5.6%	1.3
		Individual (n = 15)	3	1.3%	0.2
	Written Composition	Group (n = 15)	19	8.1%	1.3
		One-to-one (n = 15)	32	18.6%	2.1
		Individual (n = 15)	0	0.0%	0.0
Punctuation	Passage Editing	Group (n = 15)	21	5.2%	1.4
		One-to-one (n = 15)	11	3.1%	0.7
		Individual (n = 15)	11	4.7%	0.7
	Written Composition	Group (n = 15)	6	2.6%	0.4
		One-to-one (n = 15)	8	4.7%	0.5
		Individual (n = 15)	0	0.0%	0.0
Capitalisation	Passage Editing	Group (n = 15)	54	13.3%	3.6
		One-to-one (n = 15)	45	12.5%	3.0
		Individual (n = 15)	33	14.0%	2.2
	Written Composition	Group (n = 15)	0	0.0%	0.0
		One-to-one (n = 15)	1	0.6%	0.1
		Individual (n = 15)	0	0.0%	0.0
Contractions	Passage Editing	Group (n = 15)	9	2.2%	0.6
		One-to-one (n = 15)	3	0.8%	0.2
		Individual (n = 15)	2	0.9%	0.1
	Written Composition	Group (n = 15)	2	0.9%	0.1
		One-to-one (n = 15)	1	0.6%	0.1
		Individual (n = 15)	4	3.1%	0.3

4.2.3.4 Discourse – Register and Text Cohesion. Kruskal-Wallis H tests revealed no significant difference between modes in proportions of discourse – register LREs at the $p < .05$ level in PE, $\chi^2(2) = 5.89$, $p = .053$, or in WC, $\chi^2(2) = 1.51$, $p = .47$, and no significant difference in proportions of discourse – text cohesion LREs at the $p < .05$ level in PE, $\chi^2(2) = 0.52$, $p = .77$, or in WC, $\chi^2(2) = 0.21$, $p = .90$.

4.2.3.5 Mechanics – Spelling. In PE, a Kruskal-Wallis H test revealed a significant difference between modes in proportions of mechanics – spelling LREs at the $p < .05$ level, $\chi^2(2) = 6.41$, $p = .041$. Post-hoc comparison using the Mann-Whitney U-test revealed no significant difference at the $p < .025$ level between group and one-to-one, U(28) = 95, z = 0.71, $p = .48$, no significant difference between group and individual, U(28) = 68, z = 1.83, $p = .067$, but a significantly higher

proportion in one-to-one than individual, $U(28) = 55.5$, $z = 2.34$, $p = .019$. Likewise, in WC, a Kruskal-Wallis H test revealed a significant difference between modes at the $p < .05$ level, $\chi^2(2) = 21.17$, $p = .00010$. Post-hoc comparison using the Mann-Whitney U-test revealed a significantly higher proportion of mechanics – spelling LREs at the $p < .025$ level in one-to-one than group, $U(28) = 45$, $z = 2.78$, $p = .0054$, a significantly higher proportion in one-to-one than individual, $U(17) = 91$, $z = 4.33$, $p = .000010$, but no significant difference between group and individual, $U(28) = 60$, $z = 2.16$, $p = .031$.

4.2.3.6 Mechanics – Punctuation, Capitalisation and Contractions. Kruskal-Wallis H tests revealed no significant difference at the $p < .05$ level between modes in proportions of mechanics – punctuation LREs in PE, $\chi^2(2) = 2.36$, $p = .31$, or in WC, $\chi^2(2) = 1.64$, $p = .44$, mechanics – capitalisation LREs in PE, $\chi^2(2) = 0.58$, $p = .75$, or in WC, $\chi^2(2) = 0.13$, $p = .94$, or mechanics – contractions LREs in PE, $\chi^2(2) = 1.66$, $p = .44$, or in WC, $\chi^2(2) = 0.49$, $p = .78$.

4.2.4   Resolution of LREs. Table 13 presents the descriptive statistics for LRE resolution, that is, whether episodes were resolved correctly, incorrectly, or left unresolved, in PE and WC tasks, compared between the three modes.

4.2.4.1 Correctly resolved LREs. In PE, a Kruskal-Wallis H test revealed a significant difference between modes in proportions of correctly resolved LREs at the $p < .05$ level, $\chi^2(2) = 21.61$, $p = .00010$. Post-hoc comparison using the Mann-Whitney U-test revealed a significantly higher proportion of correctly resolved LREs at the $p < .025$ level in one-to-one than group, $U(28) = 216$, $z = 4.27$, $p = .000010$, a significantly higher proportion in one-to-one than individual, $U(28) = 24$, $z = 3.65$, $p = .00026$, but no significant difference between group and individual, $U(28) = 87.5$, $z = 1.02$, $p = .31$. In WC, a Kruskal-Wallis H test revealed a significant difference between modes in proportions of correctly resolved LREs at the $p < .05$ level, $\chi^2(2) = 13.14$, $p = .0014$. Post-hoc comparison using the Mann-Whitney U-test revealed a significantly higher proportion of correctly resolved LREs at the $p < .025$ level in one-to-one than group, $U(28) = 24$, $z = 3.65$, $p = .00026$, a significantly higher proportion in one-to-one than individual, $U(28) = 56$, $z = 2.32$, $p = .020$ but no significant difference between group and individual, $U(28) = 93.5$, $z = 0.77$, $p = .44$.

Table 13
LRE resolution in group, one-to-one and individual modes
(percentage of total LREs in that mode and task)*

			LREs	%*	M	SD
Correctly resolved	Passage Editing	Group (n = 15)	290	71.4%	19.3	5.7
		One-to-one (n = 15)	357	99.4%	23.8	8.7
		Individual (n = 15)	159	67.7%	10.6	5.4
	Written Composition	Group (n = 15)	196	83.8%	13.1	6.6
		One-to-one (n = 15)	171	99.4%	11.4	6.1
		Individual (n = 15)	115	89.1%	7.7	3.8
Incorrectly resolved	Passage Editing	Group (n = 15)	48	11.8%	3.2	2.7
		One-to-one (n = 15)	0	0.0%	0.0	0.0
		Individual (n = 15)	24	10.2%	1.6	2.4
	Written Composition	Group (n = 15)	27	11.5%	1.8	1.9
		One-to-one (n = 15)	1	0.6%	0.1	0.3
		Individual (n = 15)	7	5.4%	0.5	0.5
Unresolved	Passage Editing	Group (n = 15)	68	16.7%	4.5	3.6
		One-to-one (n = 15)	2	0.6%	0.1	0.5
		Individual (n = 15)	52	22.1%	3.5	2.5
	Written Composition	Group (n = 15)	11	4.7%	0.7	0.7
		One-to-one (n = 15)	0	0.0%	0.0	0.0
		Individual (n = 15)	7	5.4%	0.5	0.9

4.2.4.2 Incorrectly resolved LREs. In PE, a Kruskal-Wallis H test revealed a significant difference between modes in proportions of incorrectly resolved LREs at the $p < .05$ level, $\chi^2(2) = 14.44$, $p = .0007$. Post-hoc comparison using the Mann-Whitney U-test revealed a significantly higher proportion of incorrectly resolved LREs at the $p < .025$ level in group than one-to-one, U(28) = 15, z = 4.02, $p = .000010$, but no significant difference between group and individual, U(28) = 80, z = 1.33, $p = .19$, or between one-to-one and individual U(28) = 67.5, z =1.85, $p = .064$. In WC, a Kruskal-Wallis H test revealed a significant difference between modes at the $p < .05$ level in proportions of incorrectly resolved LREs, $\chi^2(2) = 9.27$, $p = .0097$. Post-hoc comparison using the Mann-Whitney U-test revealed a significantly higher proportion of incorrectly resolved LREs at the $p < .025$ level in group than one-to-one, U(28) = 41, z = 2.95, $p = .0033$, but no significant difference between group and individual, U(28) = 89.5, z = 0.93, $p = .35$, or between one-to-one and individual, U(28) = 64, z = 1.99, $p = .047$.

4.2.4.3 Unresolved LREs. In PE, a Kruskal-Wallis H test revealed a significant difference between modes in proportions of unresolved LREs at the *p* < .05 level, $\chi^2(2)$ = 19.59, *p* = .00001. Post-hoc comparison using the Mann-Whitney U-test revealed a significantly higher proportion of unresolved LREs at the *p* < .025 level in group than one-to-one, U(28) = 18, z = 3.90, *p* = .00010, a significantly higher proportion in individual than one-to-one U(28) = 24, z = 3.65, *p* = .00026, but no significant difference between group and individual, U(28) = 94.5, z = 0.73, *p* = .47. In WC, a Kruskal-Wallis H test revealed a significant difference between modes in proportions of unresolved LREs at the *p* < .05 level, $\chi^2(2)$ = 7.09, *p* = .029. Post-hoc comparison using the Mann-Whitney U-test revealed a significantly higher proportion of unresolved LREs at the *p* < .025 level in group than one-to-one, U(28) = 45, z = 2.78, *p* = .0054, but no significant differences between group and individual U(28) = 86, z = 1.08, *p* = .28, or between one-to-one and individual U(28) = 82.5, z = 1.22, *p* = .22.

4.2.5 Identity of LRE Initiator and Resolver. In order to more fully examine the processes of LRE initiation, I identified the initiator of each episode. In group mode, the initiator was either participant 1 (P1), a label arbitrarily assigned to the first learner to speak in the PE task, or participant 2 (P2), the second learner to speak. In one-to-one mode, the initiator was either the learner (P1) or the teacher (T). I then calculated the absolute difference between each pair of participants in numbers of episodes initiated, in order to obtain a measure of how evenly distributed LRE initiation was between the two participants.

4.2.5.1 LRE initiator.   Table 14 presents the descriptive statistics for the identity of LRE initiator in group and one-to-one modes.

Table 14
Identity of initiator in group and one-to-one modes
(* percentage of total LREs in that mode and task).

		LREs	%*	M
P1 initiates in group (n = 15)	Passage Editing	240	59.0%	16.0
	Written Composition	97	41.5%	6.5
P2 initiates in group (n = 15)	Passage Editing	166	41.0%	11.1
	Written Composition	137	58.5%	9.1
Absolute difference between P1 and P2	Passage Editing	74	18.0%	4.9
	Written Composition	40	17.0%	2.7
P1 initiates in one-to-one (n = 15)	Passage Editing	318	88.6%	21.2
	Written Composition	67	39.0%	4.5
Teacher initiates in one-to-one (n = 15)	Passage Editing	41	11.4%	2.7
	Written Composition	105	61.0%	7.0
Absolute difference between P1 and T	Passage Editing	277	77.2%	18.5
	Written Composition	38	22.0%	2.5

In PE, a Mann-Whitney U-test revealed that the absolute difference between interlocutors in episodes initiated was significantly greater in one-to-one than in group at the $p < .05$ level, U(28) = 19, z = 3.86, $p = .00012$. One-to-one learners initiated 77.2% more PE episodes than their teacher, whereas in learner-learner dyads the difference between P1 and P2 initiation was 18%. In WC, however, the Mann-Whitney U-test revealed no significant difference between group and one to one modes at the $p < .05$ level, U(28) = 97, z = 0.62, $p = .54$. In one-to-one, teachers initiated 22% more WC episodes than learners, and in learner-learner dyads, the difference between P1 and P2 was 17%. In PE, therefore, one-to-one learners tended to lead the interaction, whereas in WC, there is was more even balance of student- and teacher-led interaction.

I also compared the number of episodes initiated by learners in the individual mode (i.e. the number of individual LREs in Table 10), with numbers of episodes initiated by P1 and P2 in the group mode (Table 14), in order to compare individual learners with each one of the learners in student-student dyads. The independent samples *t*-test revealed no significant difference between numbers of episodes initiated by individual learners and episodes initiated either by P1 or P2 in group mode at the *p*

< .05 level in PE, *t* (43) = 1.19, *p* = .24, or in WC, *t* (43) = 0.56, *p* = .58. Individual learners therefore initiated roughly the same number of LREs as each group learner, the difference being that in groups the additive factor of more participants meant significantly more LREs in total.

    4.2.5.2 LRE resolver. I identified whether each LRE was resolved by P1, P2, T, both P1 and P2/T collaboratively, or by no-one (i.e. left unresolved).   The resolver was identified as P1, P2 or T if only one of the interlocutors provided the LRE resolution, and the other participant either did not contribute or only contributed by agreeing with the resolver. The resolution was identified as collaborative if both participants contributed something towards the resolution of the LRE, for example by making suggestions or evaluating the appropriateness of forms. I then calculated the absolute difference between each pair of participants in numbers of episodes resolved by each one, in order to obtain a measure of how evenly distributed LRE resolution was between the two participants. Table 15 presents the descriptive statistics for the identity of the resolver of LREs in group and one-to-one modes.

Table 15
Identity of resolver in group and one-to-one modes
(* percentage of total LREs in that mode and task).

		LREs	%*	M
P1 resolves in group (n = 15)	Passage Editing	118	29.1	7.9
	Written Composition	64	27.4	4.3
P2 resolves in group (n = 15)	Passage Editing	93	22.9	6.2
	Written Composition	86	36.8	5.7
Absolute difference between P1 and P2	Passage Editing	25	6.2	1.7
	Written Composition	22	11.2	1.5
Collaborative resolution in group (n = 15)	Passage Editing	127	31.3	8.5
	Written Composition	73	31.2	4.9
P1 resolves in one-to-one (n = 15)	Passage Editing	199	55.4	13.3
	Written Composition	52	30.2	3.5
Teacher resolves in one-to-one (n = 15)	Passage Editing	67	18.7	4.5
	Written Composition	76	44.2	5.1
Absolute difference between P1 and teacher	Passage Editing	132	36.7	8.8
	Written Composition	24	14	1.6
Collaborative resolution in one-to-one (n = 15)	Passage Editing	91	25.3	6.1
	Written Composition	44	25.6	2.9

In PE, a Mann-Whitney U-test revealed that the absolute difference between the number of episodes resolved by each interlocutor was significantly greater in one-to-one than group at the $p < .05$ level, $U(28) = 52.5$, $z = 2.47$, $p = .014$. One-to-one learners resolved 36.7% more PE episodes than their teacher, whereas in group mode the difference between learners was 6.2%. In WC, however, a Mann-Whitney U-test revealed no significant difference between group and one-to-one at the $p < .05$ level, $U(28) = 100$, $z = 0.50$, $p = .62$. In one-to-one dyads teachers resolved 14% more WC episodes than learners, and in learner-learner dyads the difference between learners was 9.4%. As with LRE initiation, one-to-one learners in PE led the resolutions more, whereas in WC resolutions were more even balanced between learners and teachers.

A Mann-Whitney U-test revealed no significant difference between group and one-to-one in the proportion of collaboratively resolved LREs at the $p < .05$ level in PE, $U(28) = 81.5$, $z = 1.27$, $p = .20$, or in WC, $U(28) = 99.5$, $z = 0.52$, $p = .60$.

4.2.5.3 Same initiator and resolver. I identified episodes that were both initiated and resolved by the same participant, in order to examine the degree to which participants in dyads languaged individually, without input from their interlocutor, rather than collaboratively. I then calculated the absolute difference between each pair of participants in numbers of episodes both initiated and resolved by the same person, in order to obtain a measure of how evenly distributed such individual LRE initiation and resolution was between the two participants. Table 16 provides the descriptive statistics for LREs initiated and resolved by the same participant, in group and one-to-one modes.

Table 16

Same initiator and resolver of LREs in group and one-to-one modes
(percentage of total LREs in that mode and task).*

		LREs	%*	M
P1 initiates and resolves in group	Passage Editing	103	25.4%	6.9
	Written Composition	34	14.5%	2.3
P2 initiates and resolves in group	Passage Editing	58	14.3%	3.9
	Written Composition	58	24.8%	3.9
Absolute difference between P1 and P2	Passage Editing	45	11.0%	3.0
	Written Composition	24	10.2%	1.6
P1 initiates and resolves in one-to-one	Passage Editing	183	51.0%	12.2
	Written Composition	14	8.1%	0.9
Teacher initiates and resolves in one-to-one	Passage Editing	14	3.9%	0.9
	Written Composition	46	26.7%	3.1
Absolute difference between P1 and T	Passage Editing	169	47.1%	11.7
	Written Composition	32	18.6%	2.1

In PE, a Mann-Whitney U-test revealed that the absolute difference between participants in the number of episodes both initiated and resolved by the same interlocutor was significantly greater in one-to-one than in group at the $p < .05$ level, $U(28) = 35.5$, $z = 3.17$, $p = .00152$. In one-to-one, students both initiated and resolved 47.1% more LREs than the teacher, while in group mode the difference between interlocutors was 11%. In WC, however, a Mann-Whitney U-test revealed no significant difference between modes at the $p < .05$ level, $U(28) = 103$, $z = 0.37$, $p = .71$.

4.3   Engagement in LREs

Table 17 presents the descriptive statistics for LRE engagement in PE and WC tasks, compared between the three modes. Engagement was identified as elaborate when there was evidence of a self-regulation strategy, such as learners seeking and/or providing confirmation, explanations or alternative forms. Engagement was coded limited when learners stated a linguistic preference or resolution without further deliberation. For group and one-to-one, elaborate refers to both participants demonstrating elaborate engagement, limited refers to both participants demonstrating limited engagement, and elaborate + limited refers to one participant demonstrating elaborate engagement and the other demonstrating limited engagement.

Table 17

Engagement in LREs in group, one-to-one and individual modes
* percentage of total LREs in each mode and task

			LREs	%*	M
Elaborate	Passage Editing	Group (n = 15)	126	31.0%	8.4
		One-to-one (n = 15)	131	36.5%	8.7
		Individual (n = 15)	151	64.3%	10.1
	Written Composition	Group (n = 15)	54	23.1%	3.6
		One-to-one (n = 15)	32	18.6%	2.1
		Individual (n = 15)	35	27.1%	2.3
Limited	Passage Editing	Group (n = 15)	177	43.6%	11.8
		One-to-one (n = 15)	117	32.6%	7.8
		Individual (n = 15)	84	35.7%	5.6
	Written Composition	Group (n = 15)	144	61.5%	9.6
		One-to-one (n = 15)	95	55.2%	6.3
		Individual (n = 15)	94	72.9%	6.3
Elaborate + Limited	Passage Editing	Group (n = 15)	103	25.4%	6.9
		One-to-one (n = 15)	111	47.4%	7.4
	Written Composition	Group (n = 15)	34	14.5%	2.3
		One-to-one (n = 15)	45	26.2%	3.0

4.3.1 Elaborate Engagement. In PE, a Kruskal-Wallis H test revealed a significant difference between modes in proportions of LREs characterised by elaborate engagement at the *p* < .05 level, $\chi^2(2)$ = 21.31, *p* = .0001. Post-hoc comparison using the Mann-Whitney U-test revealed a significantly higher proportion of elaborate engagement LREs at the *p* < .025 level in individual than group, U(28) = 12.5, z = 4.13, *p* = .000010, a significantly higher proportion in individual than one-to-one, U(28) = 21.5, z = 3.75, *p* = .00018, but no significant difference between group and one-to-one U(28) = 102.5, z = 0.39, *p* = .70. In WC, a Kruskal-Wallis H test revealed no significant difference between modes at the *p* < .05 level, $\chi^2(2)$ = 3.43, *p* = .18.

4.3.2 Limited Engagement. In PE, a Kruskal-Wallis H test revealed a significant difference between modes in proportions of LREs characterised by limited engagement at the *p* < .05 level, $\chi^2(2)$ = 10.35, *p* = .0057. Post-hoc comparison using the Mann-Whitney U-test revealed a significantly higher proportion of limited engagement LREs in group than one-to-one at the *p* < .025 level, U(28) = 30.5, z = 3.38, *p* = .00072, but no significant difference between group and individual, U(28) =

62, z = 2.07 p = .039, or between one-to-one and individual, U(28) = 111.5, z = 0.021 p = .98. In WC, a Kruskal-Wallis H test revealed a significant difference between modes at the p < .05 level, $\chi^2(2)$ = 10.63, p = .0049. Post-hoc comparison using the Mann-Whitney U-test revealed a significantly higher proportion of limited engagement LREs in individual than one-to-one at the p < .025 level, U(28) = 39.5, z = 3.01, p = .0026, but no significant difference between group and one-to-one, U(28) = 69, z = 1.78, p = .075, or between group and individual, U(28) = 67.5, z = 1.85, p = .064.

4.3.3   Elaborate + Limited Engagement. In PE, a Mann-Whitney U test revealed no significant difference between group and one-to-one modes in the proportion of episodes characterised by elaborate engagement in one participant and limited engagement in the other at the p < .05 level, U(28) = 77, z = 1.45, p = .15. In WC, however, the Mann-Whitney U tests revealed a significantly higher proportion of episodes characterised by elaborate engagement in one participant and limited engagement in the other in one-to-one than group at the p < .05 level, U(28) = 46.5, z = 2.72, p = .0065.

4.3.3.1 Identity of elaborate and limited participants. Given that a significantly higher proportion of elaborate + limited LREs was observed in one-to-one than group, I examined the identity of the limited and elaborate participants. I then calculated the absolute difference between each pair of participants in the numbers of episodes in which one learner demonstrated elaborate engagement while the other demonstrated limited engagement, as this may indicate possible patterns of dominance or passivity. Table 18 presents the descriptive statistics for the identity of elaborate and limited participants in elaborate + limited LREs in one-to-one and group modes.

The Mann-Whitney U-test revealed that the absolute difference between group mode P1 elaborate + P2 limited LREs, on the one hand, and P1 limited + P2 elaborate LREs, on the other, did not significantly differ from the absolute difference between one-to-one P1 elaborate + teacher limited LREs, on the one hand, and P1 limited + teacher elaborate LREs, on the other, at the p < .05 level, either in PE, U(28) = 108.5, z = 0.15, p = .88, or in WC, U(28) = 74.5, z = 1.55, p = .12

Table 18

Identity of elaborate and limited participants in elaborate + limited LREs in group and one-to-one modes
* percentage of total LREs in each mode and task

		LREs	%*	M
P1 elaborate + P2 limited in group (n = 15)	Passage Editing	58	14.3%	3.9
	Written Composition	11	4.7%	0.7
P1 limited + P2 elaborate in group (n=15)	Passage Editing	45	11.1%	3.0
	Written Composition	23	9.8%	1.5
Absolute difference between P1 elaborate + P2 limited and P1 limited + P2 elaborate in group	Passage Editing	13	3.2%	0.9
	Written Composition	12	5.1%	0.8
P1 elaborate + Teacher limited in one-to-one (n=15)	Passage Editing	48	13.4%	3.2
	Written Composition	5	2.9%	0.3
P1 limited + Teacher elaborate in one-to-one (n = 15)	Passage Editing	63	17.5%	4.2
	Written Composition	40	23.3%	2.7
Absolute difference between P1 elaborate + T limited and P1 limited + T elaborate in one-to-one	Passage Editing	15	4.1%	1.0
	Written Composition	35	20.4%	2.3

4.3.4 Correct Resolution and Engagement: Correlations. I ran Spearman's correlation tests to examine associations between the dependent variables resolution (correctly resolved, incorrectly resolved or unresolved) and engagement (elaborate, limited, or elaborate + limited), in order to test if elaborate cognitive engagement was associated with correctness of resolution. Table 19 contains the rho and *p*-values. Statistically significant strong ($0.60 < $ rho $ < 0.79$) or very strong ($0.80 < $ rho $ < 1$) correlations at the $p < .05$ level are highlighted in **bold** typeface.

Statistically significant strong to very strong correlations were found between correct resolution and all three types of engagement, but in most cases, correlation coefficients were higher for limited engagement. It did not, therefore, appear that elaborate engagement was any more closely associated with correct LRE resolution than other types of engagement.

Table 19

Rho and p-values for Spearman's correlations between resolution and engagement

Resolution	Engagement	Passage Editing						Written Composition					
		Group (n=15)		One-to-one (n=15)		Individual (n=15)		Group (n=15)		One-to-one (n=15)		Individual (n=15)	
		Rho	*p*	Rho	*p*	Rho	*p*	Rho	*p*	Rho	*p*	Rho	*p*
CR	E	0.19	0.51	**0.65**	**0.01**	**0.64**	**0.01**	**0.83**	**0.00**	**0.86**	**0.00**	**0.78**	**0.00**
CR	L	**0.66**	**0.01**	**0.92**	**0.00**	**0.71**	**0.00**	**0.87**	**0.00**	**0.85**	**0.00**	**0.69**	**0.00**
CR	E+L	0.58	0.02	0.42	0.12			**0.89**	**0.00**	**0.71**	**0.00**		
IR	E	0.55	0.33	n/a*	n/a	0.47	0.08	**0.62**	**0.01**	0.03	0.91	0.14	0.61
IR	L	0.42	0.12	n/a	n/a	0.43	0.11	**0.65**	**0.01**	0.44	0.10	-0.12	0.66
IR	E+L	0.36	0.19	n/a	n/a			0.45	0.09	0.32	0.24		
UR	E	0.21	0.44	-0.25	0.37	-0.03	0.90	-0.08	0.78	n/a	n/a	0.31	0.26
UR	L	0.30	0.27	0.09	0.74	-0.16	0.56	0.32	0.25	n/a	n/a	0.50	0.06
UR	E+L	0.34	0.22	0.44	0.10			0.15	0.60	n/a	n/a		

* There were no incorrectly resolved episodes in one-to-one passage editing.

4.4 Learning of Forms Topicalised in LREs: Microgenetic Development and Post-test Performance.

4.4.1 Microgenetic Development. Table 20 presents the descriptive statistics for instances of microgenetic development (MGD) observed in interaction, compared between group, one-to-one and individual modes. An instance of MGD was one in which, based on a qualitative analysis of the interaction alone (i.e. without consulting the post-test), I was able to observe evidence of some change in one or both of the participants' language knowledge, evidenced by uptake in an extended response (that is, beyond a phatic "oh" or "OK") and / or further use of an item which, according to the protocol, a participant had previously not known or not been fully able to use.

Table 20

Instances of microgenetic development observed in group, one-to-one and individual modes

		Instances of MGD	M	SD
Passage Editing	Group (n = 15)	16	1.1	1.2
	One-to-one (n = 15)	40	2.7	2.1
	Individual (n = 15)	1	0.1	0.3
Written Composition	Group (n = 15)	3	0.2	0.4
	One-to-one (n = 15)	16	1.1	1.5
	Individual (n = 15)	0	0.0	0.0

In PE, a Kruskal-Wallis H test revealed a significant difference between modes in the instances of MDG observed at the $p < .05$ level, $\chi^2(2) = 14.03$, $p = .00090$. Post-hoc comparison using the Mann-Whitney U-test revealed significantly more instances of MGD at the $p < .025$ level in group than individual, U(28) = 50, z = 2.57, $p = .010$, significantly more in one-to-one than individual, U(28) = 33, z = 3.28, $p = .0010$, but no significant difference between group and one-to-one U(28) = 66, z = 1.91, $p = .056$. In WC, a Kruskal-Wallis H test revealed no significant difference between modes at the $p < .05$ level, $\chi^2(2) = 5.27$, $p = .072$.

4.4.2 Test Scores

The post-test was an isomorphic passage editing task that contained the same number of the same kinds of formal errors as the passage editing task participants had completed. Participants individually corrected the errors on the post-test. I then compared each participant's post-test to the transcript of his or her original passage editing task. If the post-test contained a form that had been topicalised in an LRE, I considered this form a test item. If the participant attempted to correct the form, I marked this as a test item attempted. I then proceeded to categorise the item attempted as corrected in agreement or in disagreement with the LRE resolution (provided the LRE had been resolved in the task).

4.4.2.1. Items that corresponded to LREs. Table 21 presents the numbers of items on the post-test that corresponded to LREs produced in PE. It also expresses this number as a percentage of total LREs in that mode and task, and provides the mean number of items per participant. The number of items for group mode has been doubled to reflect n = 30 participants, i.e. items were counted twice, once for each participant.

Table 21
Post-test items that corresponded to LREs in group, one-to-one and individual modes

	Items that corresponded to LREs in PE	As a percentage of total LREs in PE	Mean per participant
Group (n = 30)	614	75.6%	20.5
One-to-one (n = 15)	287	79.9%	19.1
Individual (n = 15)	201	85.5%	13.4

A Kruskal-Wallis H test revealed no significant difference between modes in the number of items, expressed as a proportion of total LREs, that corresponded to

LREs at the $p < .05$ level, $\chi^2(2) = 0.2$, $p = .90$. Test items corresponded to between 75.6% and 85.5% of LREs produced in the PE task. This suggests that the post-test managed to gather data relating to most of the LREs produced, and this may be considered evidence of its validity.

4.4.2.2. Test items attempted. If a participant attempted to correct a form, this was marked as a test item attempted. Table 22 presents the numbers of test items attempted by participants in each mode. It also expresses this number as a percentage of test items that corresponded to LREs, and provides the mean number of items attempted per participant.

Table 22
Post-test items attempted in group, one-to-one and individual modes

	Items that corresponded to LREs	Items attempted	Items attempted as a percentage of items that corresponded to LREs	Mean per participant
Group (n = 30)	614	249	40.6%	8.3
One-to-one (n = 15)	287	160	55.7%	10.7
Individual (n = 15)	201	103	51.2%	6.9

A Kruskal-Wallis H test revealed a significant difference between modes in items attempted, expressed as a proportion of tests items that corresponded to LREs, at the $p < .05$ level, $\chi^2(2) = 9.22$, $p = .01$. Post-hoc comparison using a Mann-Whitney U-test revealed a significantly higher proportion of test items attempted by one-to-one than group learners at the $p < .025$ level, U(43) = 116, z = 2.61, $p = .0091$, a significantly higher proportion attempted by individual than group learners, U(43) = 129.5, z = 2.29, $p = .022$, but no significant difference between one-to-one and individual learners, U(28) = 105.5, z = 0.27, $p = .79$. One-to-one and individual learners attempted to correct over half of the forms on the post-test that corresponded to LREs in the task, whereas group learners attempted fewer than half.

4.4.2.3 Post-test items corrected i) in agreement with LRE resolution, ii) in disagreement with LRE resolution, iii) when the LRE had been unresolved and iv) only partially. If a participant attempted to correct a test item, this correction was categorised as i) in agreement with the original LRE resolution, ii) in disagreement with the LRE resolution, iii) there had been no LRE resolution, and iv) only partial,

e.g. the post-test item was circled or underlined but no alternative form proposed. Table 23 presents the data, and also expresses these as percentages of items attempted.

Table 23

Post-test items corrected i) in agreement with LRE resolution, ii) in disagreement with LRE resolution, iii) when the LRE had been unresolved and iv) only partially.

	Items attempted	Items corrected in **agreement** with LRE resolution	Items corrected in **agreement,** as a proportion of items attempted	Mean items per participant
Group (n = 30)	249	182	73.1%	6.1
One-to-one (n = 15)	160	124	77.5%	8.3
Individual (n = 15)	103	73	70.9%	4.9
	Items attempted	Items corrected in **disagreement** with LRE resolution	Items corrected in **disagreement,** as a proportion of items attempted	Mean items per participant
Group (n = 30)	249	37	14.9%	1.2
One-to-one (n = 15)	160	20	12.5%	1.3
Individual (n = 15)	103	4	3.9%	0.3
	Items attempted	Items corrected when there had been **no resolution**	Items corrected when there had been **no resolution,** as a proportion of items attempted	Mean items per participant
Group (n = 30)	249	11	4.4%	0.4
One-to-one (n = 15)	160	0	0.0%	0.0
Individual (n = 15)	103	10	9.7%	0.7
	Items attempted	Items corrected **only partially**	Items corrected **only partially,** as a proportion of items attempted	Mean items per participant
Group (n = 30)	249	17	6.8%	0.6
One-to-one (n = 15)	160	16	10.0%	1.1
Individual (n = 15)	103	16	15.5%	1.1

Kruskal-Wallis H tests revealed no significant differences at the $p < .05$ level between modes in proportions of test items i) resolved in agreement with LRE resolution, $\chi^2(2) = 2.08$, $p = .35$, ii) in disagreement with LRE resolution, $\chi^2(2) = 4.71$, $p = .095$, iii) when the corresponding LRE had been left unresolved, $\chi^2(2) = 5.81$, $p = .055$, or iv) resolved only partially, $\chi^2(2) = 0.94$, $p = .63$.

4.4.2.4. Post-test items attempted relating to forms not languaged. Sometimes participants corrected forms on the post-test that had not been languaged in the task. Table 24 presents the numbers of post-test items attempted that related to forms that had not been languaged, and also presents a mean value per participant.

Table 24

Post-test items attempted relating to forms not languaged in group, one-to-one and individual modes

	Items attempted relating to forms not languaged in the task	Mean per participant
Group (n = 30)	138	4.6
One-to-one (n = 15)	32	2.1
Individual (n = 15)	46	3.1

A Kruskal-Wallis H test revealed no significant difference between modes in numbers of test items attempted relating to forms that had not been languaged at the *p* < .05 level, $\chi^2(2) = 4.12$, *p* = .13

4.4.2.5 Correctness of LRE resolution and test responses: correlations. I ran Spearman's correlation tests to examine associations between PE dependent variables LRE resolution (correctly resolved, incorrectly resolved or unresolved) and the most common test responses (attempted, resolved in agreement with LRE resolution, and resolved in disagreement with LRE resolution). I did this to test if, for example, correctly resolved episodes were associated with test items resolved in agreement with LRE resolution. Table 25 contains the rho and *p*-values. Statistically significant strong (0.60 < rho < 0.79) or very strong (0.80 < rho < 1) correlations at the *p* < .05 level are highlighted in **bold** typeface.

Table 25

Rho and p-values for Spearman's correlations between resolution and test responses

Resolution	Test items	Passage Editing					
		Group (n=30)		One-to-one (n=15)		Individual (n=15)	
		Rho	*p*	Rho	*p*	Rho	*p*
CR	Attempted	0.08	0.68	0.10	0.71	**0.86**	**0.00**
CR	Resolved in agreement	-0.13	0.49	0.01	0.97	**0.91**	**0.00**
CR	Resolved in disagreement	0.19	0.31	**0.69**	**0.00**	0.28	0.31
IR	Attempted	0.04	0.83	n/a*	n/a*	0.17	0.55
IR	Resolved in agreement	-0.11	0.57	n/a*	n/a*	0.15	0.59
IR	Resolved in disagreement	0.37	0.05	n/a*	n/a*	0.24	0.40
UR	Attempted	0.24	0.20	-0.22	0.44	-0.50	0.06

* There were no incorrectly resolved episodes in one-to-one passage editing.

In the individual mode, very strong statistically significant correlations were found between correct LRE resolution and test items attempted, and also between correct LRE resolution and items resolved in agreement. In group and one-to-one, such correlations were neither strong nor statistically significant. In one-to-one, conversely, there was a statistically significant strong correlation between correct LRE resolution and test items resolved in disagreement with LRE resolution.

4.4.2.6 Engagement and test responses: correlations. I ran Spearman's correlation tests to examine associations between PE dependent variables engagement (elaborate, limited, and elaborate + limited) and the most common test responses (attempted, resolved in agreement with LRE resolution, and resolved in disagreement with LRE resolution). I did this to test if, for example, episodes characterised by elaborate engagement were associated with test items resolved in agreement with LRE resolution. Table 26 contains the rho and *p*-values. Statistically significant strong $(0.60 < \text{rho} < 0.79)$ or very strong $(0.80 < \text{rho} < 1)$ correlations at the *p* < .05 level are highlighted in **bold** typeface.

Table 26

Rho and p-values for Spearman's correlations between engagement and test responses

Engagament	Test items	Passage Editing					
		Group (n=30)		One-to-one (n=15)		Individual (n=15)	
		Rho	*p*	Rho	*p*	Rho	*p*
E	Attempted	0.37	0.46	0.13	0.65	**0.64**	**0.01**
E	Resolved in agreement	0.24	0.21	0.09	0.74	**0.64**	**0.01**
E	Resolved in disagreement	0.39	0.03	**0.65**	**0.01**	0.39	0.16
L	Attempted	0.05	0.81	0.00	0.00	0.56	0.03
L	Resolved in agreement	-0.21	0.26	-0.14	0.61	**0.62**	**0.01**
L	Resolved in disagreement	0.15	0.44	**0.70**	**0.00**	-0.30	0.23
E + L	Attempted	-0.11	0.56	-0.02	0.90		
L + L	Resolved in agreement	-0.31	0.09	-0.03	0.92		
E + L	Resolved in disagreement	0.03	0.86	-0.09	0.75		

In the individual mode, statistically significant strong correlations were found between LREs characterised by elaborate engagement and test items both attempted and resolved in agreement with LRE resolution, while in one-to-one, statistically significant strong correlations were found between LREs characterised by elaborate

engagement and test items and resolved in disagreement with LRE resolution. In the individual mode, statistically significant strong correlations were found between LREs characterised by limited engagement and test items resolved in agreement with LRE resolution, while in one-to-one, statistically significant strong correlations were found between LREs characterised by limited engagement and test items resolved in disagreement with LRE resolution.

In the following Chapter V: Analysis, the quantitative results are analysed in relation to each of the research questions, and triangulated with data from transcribed learner interaction, interviews and questionnaire responses. Broader implications for delivery mode and language learning are considered in Chapter VI: Discussion and Conclusions.

CHAPTER V: ANALYSIS

5.1   Introduction

This dissertation study set out to answer the following research questions:

1) How do the number, focus and resolution of LREs differ when EFL learners do the same tasks in three delivery modes: i) face-to-face group classes (in learner-learner dyads); ii) one-to-one private tuition contexts (in learner-teacher dyads); and iii) asynchronous online contexts (individually)?

2) How does learners' engagement in LREs differ between the three delivery modes?

3) How does learning of the forms topicalised in LREs, in terms of microgenetic development and post-test performance, vary between the three delivery modes?

4) What are the broader implications for delivery mode and language learning?

In this chapter, the quantitative results presented in Chapter IV: Results will be analysed and triangulated with qualitative data from transcribed learner interaction, interviews and questionnaires. Research questions one to three will be addressed in turn, and findings will relate back to the theories and empirical studies discussed in Chapter II: Literature Review. For ease of reference, each section begins with a table that selectively reproduces the relevant quantitative data originally presented in Chapter IV: Results. Each sub-heading within sections comprises a key finding that provides the focus for analysis.

Research question 4 regarding broader implications will be considered in Chapter VI: Discussion and Conclusions.

5.2 Research Question 1: How do the number, focus and resolution of LREs differ when EFL learners do the same tasks in three delivery modes: i) face-to-face group classes (in learner-learner dyads); ii) one-to-one private tuition contexts (in learner-teacher dyads); and iii) asynchronous online contexts (individually)?

5.2.1 Number of LREs

Table 10 (partially reproduced)

Number of LREs in group, one-to-one and individual modes

		LREs	M	SD
Passage Editing	Group (n = 15)	406	27.1	7.9
	One-to-one (n = 15)	359	23.9	8.7
	Individual (n = 15)	235	15.7	4.4
Written Composition	Group (n = 15)	234	15.6	7.9
	One-to-one (n = 15)	172	11.5	6.2
	Individual (n = 15)	129	8.6	4.1

5.2.1.1 No significant differences between numbers of group and one-to-one LREs. The quantitative analysis demonstrated that in passage editing (PE), significantly more LREs were produced in group and one-to-one modes than in individual, but the difference between group and one-to-one was not statistically significant. Likewise, in written composition (WC), no significant difference in LRE numbers was found between group and one-to-one.

These findings suggest that the identity of the second participant in a dyad may be less important for languaging than the presence of two, rather than one, participants, no matter whether the second participant is another learner or a teacher. Questionnaire results provide further support for this claim, as no significant differences were found between the ratings awarded to preferences for doing tasks with other students, or with the teacher, as a reason for choosing current mode of study.

This finding is noteworthy because, as discussed in the literature review, no currently published studies directly address differences between student-student and student-teacher languaging. The result differs from Fernandez Dobao (2012b), who found NS-NNS dyads to produce more LREs than NNS-NNS dyads, and also from

Kim & McDonough (2008), who found significantly more LREs were produced when interlocutors of different proficiency levels were paired. However, in these studies there was no comparison of learner-learner and learner-teacher dyads, but rather learner-learner dyads in which the participants had different L1s (Fernández Dobao) or different proficiency levels (Kim & McDonough). They are therefore of limited comparability to findings from the present study.

The present finding adds to the existing body of literature examining languaging within learner-learner dyads by providing further evidence that learners are able to talk about the language they are producing, question their language use, or other- or self-correct (Swain 1998:70), in ways that involve negotiation of form (Ellis 2000:201), the explicit discussion of linguistic forms. While differences were not statistically significant, that there were more LREs in group mode than one-to-one reaffirms that peer interaction is an ideal context for learners to experiment with language and debate form, meaning and use (Philp *et al* 2014). Furthermore, the qualitative analysis of learner interaction reveals that within these episodes, there were frequent instances of peer scaffolding (Donato 1994; Ohta 2000, 2001, Storch 2002, 2005), in which learners, who had different levels of expertise in different areas of language and language skills, were able to support each other's development in ways similar to those employed by teachers to in learner-teacher dyads.

Examples of such support were evident throughout the group mode interaction, such as in the following extract from group dyad Gregorio and Giselda. In the first LRE, Gregorio sought support regarding the use of the definite article with languages, and Giselda provided this, resolving the LRE by engaging in a metalinguistic explanation. Gregorio then initiated a second LRE, this time about the capitalisation of languages, and Giselda again resolved the LRE with a metalinguistic explanation. Gregorio's prompt response in the final line appeared to suggest he had understood the LRE resolutions:

Gregorio	Yes we change this… "is impossible to find good courses in Chinese or the Russian"… I think here is necessary the Chinese, or the Russian, no?
Giselda	No, is not necessary, Chinese or Russian… just Russian, no, the, because the article there is, it is not necessary… with the languages…
Gregorio	And this Russian, in capital letters, this is necessary, er Russian?
Giselda	Yes, the language need capital letters… but, but, it not have the… this article
Gregorio	Ah OK

Such interaction was similar in nature to metalinguistic discussions between learners and teachers in the one-to-one mode, such as this exchange between Onora and her teacher regarding article usage with languages:

Onora	"To find good courses in Chinese, or in Russian"
Teacher	OK good, why, why is this not correct do you think?...
Onora	Because you don't say the Russian @
Teacher	OK yeah… so with languages we, we don't use a, an article…
Onora	In general you don't use articles?
Teacher	Not with languages
Onora	OK
Teacher	Not with languages…

While in the above exchanges there were structural differences between learner-teacher and learner-learner interaction, which will be discussed below in relation to LRE initiation and resolution, the lack of significant differences between the two modes in LRE numbers indicates that interaction is the site of languaging, where participants are able to support each other's development, and where languaging occurs in roughly equal measure regardless of the identity of the participants.

5.2.1.2 Individual learners produced significantly fewer LREs. In both PE and WC, individuals produced significantly fewer LREs than learner-learner dyads in the group mode; in PE, individuals produced significantly fewer LREs than both learner-learner dyads in the group mode and learner-teacher dyads in one-to-one. This finding lends support to the majority of comparative studies cited in the literature review, which claim benefits for collaborative task performance compared to individual performance (although it should once again be highlighted that the majority of these studies compared the impact of the two conditions on the accuracy, complexity and fluency of the written and / or spoken output, rather than on languaging).

One possible explanation for the significant difference between individual and collaborative LRE numbers is the methodological problem inherent in employing think–aloud protocols to collect data from individuals. According to post-hoc interviews, some individual learners found the approach difficult or unusual:

<pre>
Me: How did you feel doing the task?
Imogen: … er, OK, I like it… sometimes is more, more difficult to speak… er to do the
           activity when you are speaking in the, er…
Me: The recorder?
Imogen: Yes, the recorder, but… but is OK, I like it…
Me: Can you tell me more about the, this difficulty?
Imogen: @ … erm… when I am, thinking, I am, I'm trying to, to do the activity, but I have to
           speak… this is the, the difficult…
Me   OK, yeah… do you think the activity would be easier if you didn't have to speak?
Imogen: Yes… I think so, yes… is more like a normal activity then
</pre>

Imogen's reference to a "normal activity" suggests that when working though tasks on her own, she would normally think silently. The research instrument therefore appeared not to be observing typical behaviour. Her sentiments were echoed by Ilroy, who produced the fewest LREs (six) of all participants in PE:

<pre>
Me: This task, where you corrected a text, was it similar or different from tasks you'd
           done before?
Ilroy: This task?
Me: Yeah
Ilroy: Ah… was, was different
Me: How? How was it different?
Ilroy: Because when I study at my, on my… alone, I don't have to speak, to say the things, I
           only think the things
Me: Hmm… so was it more difficult?
Ilroy: Yes, is more difficult definitely, to think and to, to say
</pre>

As suggested by Kim (2008), the think-aloud may have represented an additional cognitive demand not experienced by dyads, and this may have negatively impacted the number of LREs produced. Furthermore, while participants were not specifically instructed to speak in L2, they may have been under the impression that L2 was expected, particularly given that all materials and tasks in their courses of study are presented in L2 only. While this may have inhibited output, the same limitation may also apply to the other modes (and in any case, there are instances of code-switching in all three modes).

It may be the case, then, that the act of verbalising was reactive (Ellis 2001; Jourdenais 2001) to the task at hand, and altered the cognitive processes taking place to complete the main task. If this is the case, it lends support to Vygotsky's position that "thought is restructured as it is transformed in speech. It is not expressed but completed in the word" (1987: 150). In other words, it is not, as cognitivist SLA researchers working from an information processing perspective of human cognition

such as Ericsson & Simon (1993) might argue, possible to simply "dump" thought in speech once it has occurred in the mind; rather, thought and speech interact as they co-occur.

5.2.1.3 Individuals initiated a similar number of LREs to each one of the learners in student-student dyads.

Table 14 (partially reproduced, and adapted to include individual data from Table 10)
Identity of initiator

		LREs	M
P1 initiates in group (n = 15)	Passage Editing	240	16.0
	Written Composition	97	6.5
P2 initiates in group (n = 15)	Passage Editing	166	11.1
	Written Composition	137	9.1
Individual initiates (n = 15)	Passage Editing	235	15.7
	Written Composition	129	8.6

Despite the potential limitation of reactivity discussed above, it is important to note that the number of LREs produced by individual learners in PE (235) and WC (129) was not significantly different from learner-learner LREs *initiated* by participant 1 (240 in PE, and 97 in WC) or participant 2 (166 in PE and 137 in WC) in group mode. Individual learners therefore seemed to identify language problems and initiate LREs about those problems to a similar extent as each one of their group counterparts. This suggests that all learners, whether they are working individually or in dyads, see language problems, and initiate LREs about those problems, to more or less the same degree. The difference is that in learner-learner dyads, the sum of these observations and initiations means there is a significantly greater total number of LREs.

The additive effect of peer interaction is supported by evidence from the interviews. Gina, for example, discussed the benefits of peer collaboration with her partner Giordano:

> Me: … the correction task where you corrected the email, would you have preferred to do that task alone or were you happy to do it with your partner? …
> Gina   I feel OK when I do it with my partner because maybe if I can't see anything, he see, and we correct it

This result supports findings from Fernández Dobao (2012a, 2014) and Lasito & Storch (2013), in which increasing the number of participants resulted in more

linguistic resources being pooled, and significantly greater numbers of LREs. In other words, two heads appear to be better than one (Storch 1999) when it comes to numbers of LREs. Given the hypothesized relation between languaging and learning, this greater number of LREs in dyads may have a positive impact on the number of learning opportunities.

5.2.1.4 Significantly more LREs in PE than in WC.

Table 10 (summarised)
Total number of LREs in passage editing and individual modes

	LREs	M
Passage Editing	1000	22.2
Written Composition	535	11.9

While comparison between tasks was not one of the present study's research aims, it is noteworthy that significantly more LREs were produced in PE than WC. This finding supports Storch (1998), in which much of the learner talk in a written composition task was about ideas and content rather than linguistic features; that is, the talk, while task-focussed, did not constitute languaging. Talk about ideas and content characterised a large amount of WC interaction in the present study, as illustrated in this extract from Gianfranco and Gilberto:

Gianfranco	You agree that smoking is a good idea, I mean everywhere in your house?
Gilberto	No
Gianfranco	Alright, so we don't agree with this topic, shall we ban the blah blah blah, no, we we shouldn't banned smoking, no we, we should ban smoking but erm the thing is that this is very radical, very very radical, is just saying that we
Gilberto	*No estaría mal* [it wouldn't be bad]
Gianfranco	It's saying that we, we, we wouldn't be er just
Gilberto	translate er
Gianfranco	We just could not smoke
Gilberto	Firstly,
	I'm agree that is a good erm, manner reduce the… smoke or the cigarettes
Gianfranco	you should say
Gilberto	Or studying the serious of smoking

Likewise, Giuliana and Guillermo engaged in frequent exchanges in WC regarding ideas, rather than linguistic forms:

Giuliana	Expensive, expensive erm… then we can, develop the ideas and, what more… erm, pros? The choice to… to be free @ no?
Guillermo	Well is… @ the choice to be
Giuliana	Free… and then erm
Guillermo	Erm the state, the country, win money if
Giuliana	OK, pros erm
Guillermo	is an
	essay so
Giuliana	Money for the government?
Guillermo	Money for the government?... erm

A further finding regarding LRE numbers compared between tasks is that in WC, while learner-learner dyads in group mode produced significantly more LREs than individual participants, differences between group and one-to-one learners, and one-to-one and individual learners, were not significant. In PE, conversely, one-to-one learners produced significantly more LREs than individuals; and while group learners in both PE and WC produced significantly more LREs than individuals, the difference was greater in PE. This suggests that in WC, the presence of an interlocutor had less of an impact on LRE production than in PE. The pedagogical implication of this finding may be that WC is a task that learners could be asked to perform alone, no matter which mode they are working in, and benefit from similar amounts of languaging. PE, conversely, may be more beneficially performed in peer-peer or student-teacher dyads where knowledge can be pooled.

5.2.2   Focus and Sub-Focus of LREs

Research Question 1 asked not only how numbers of LREs differ, but also how the focus of LREs compares between modes. The quantitative analysis revealed that in PE, group and one-to-one learners tended to focus their attention evenly across the four foci of lexis, grammar, discourse and mechanics. Around a quarter of total LREs focussed on each language area, although there was a slight tendency towards lexical LREs, which accounted for nearly 27% of LREs in learner-learner dyads, and almost 30% of LREs in learner-teacher dyads. This even focus across language areas may relate to task design, given that the seeded errors were intentionally distributed across four language areas. If this is the case, it supports findings in García Mayo 2002b, in which the linguistic features topicalised in LREs generally corresponded to features targeted by the task.

In the following section each linguistic focus will be compared between modes, with reference to the corresponding sub-foci.

5.2.2.1 Lexis: the most languaged focus, but no significant difference between modes.

Table 11 (partially reproduced)
Lexis LREs in group, one-to-one and individual modes
(* percentage of total LREs in that mode and task)

Lexis		LREs	%*	M
Passage Editing	Group (n = 15)	109	26.8%	7.3
	One-to-one (n = 15)	107	29.8%	7.1
	Individual (n = 15)	69	29.4%	4.6
Written Composition	Group (n = 15)	124	53.0%	8.3
	One-to-one (n = 15)	76	44.2%	5.1
	Individual (n = 15)	75	58.1%	5.0

No significant differences were found between modes in the proportions of LREs focussing on lexis, in either task. Lexis was the most languaged focus in all modes, with a particularly strong presence in WC: lexical LREs accounted for over half of total LREs in group and individual WC, and 44% in one-to-one. This supports findings from Storch & Aldosari (2012), one of the few studies to employ written composition, in which most LREs were lexical rather than grammatical.

This heavy emphasis on lexical LREs suggests that the act of writing the composition necessitated explicit consideration of word choice, to a greater extent than grammatical, discursive or mechanical aspects. Another possible explanation for the tendency to lexical LREs relates to the coding methodology employed, as the lexis LRE category encompassed a wide range of linguistic discussions. One of the most common types of lexis LRE was a lexical search in which an L2 item was stated and followed by the L1 equivalent, such as in this correctly resolved episode from Ibrahim's WC protocol:

> Ibrahim: Furthermore, the taxes on the cigarettes… taxes on the… are a very positive, erm I don't know how to say the *fuentes de ingreso* [sources of income] … like, source, source of income, something like that… for the state

Another type of lexical LRE commonly occurring in one-to-one and group modes was lexical clarification checks or requests, such as this LRE between Olivia and her teacher:

Teacher:	should we ban smoking everywhere, do you understand this, ban
Olivia:	not really, no, this is the first time I
Teacher:	This is prohibit
Olivia:	Ah OK
Teacher:	Prohibit completely
Olivia:	not allowed
Teacher	Not allowed, yeah

In group mode, lexical LREs often focussed on the appropriacy of word choice, such as this correctly resolved episode, in which Gordon suggested "illnesses" as an alternative to (the also correct) "health problems":

Gustavo	So… there are many health problems … health problems
Gordon	Or illnesses
Gustavo	OK, many illnesses or health problems, that's cause the smoking, for example
Gordon	Cancer

The tendency towards lexis rather than grammar LREs in a form-focussed task such as PE is at odds with findings from previous research. Several studies have observed a predomination of grammar LREs, such as Leeser (2004), in which learners performed a dictogloss; Alegría de la Colina & García Mayo (2007), who employed jigsaw, text reconstruction and dictogloss; Storch (2008), who used text reconstruction; and Basterrechea & García Mayo (2013), who employed dictogloss. In Leeser (2004), lexis LREs were a trait of learners at a lower proficiency than the B2 learners observed in the present study, whereas more proficient learners in his study focussed more on grammar. However, the structure of the tasks employed in those studies may have influenced LRE type, as they encouraged form-based discussion in a way that PE in the present study – containing only six grammatical errors – may not have.

5.2.2.2 Grammar: focussed on significantly more by dyads than by individuals.

Table 11 (partially reproduced)
Grammar LREs in group, one-to-one and individual modes
(percentage of total LREs in that mode and task)*

Grammar		LREs	%*	M
Passage Editing	Group (n = 15)	105	25.9%	7.0
	One-to-one (n = 15)	85	23.7%	5.7
	Individual (n = 15)	35	14.9%	2.3
Written Composition	Group (n = 15)	40	17.1%	2.7
	One-to-one (n = 15)	29	16.9%	1.9
	Individual (n = 15)	24	18.6%	1.6

Table 12 (partially reproduced)
Grammar sub-foci in group, one-to-one and individual modes
(percentage of total LREs in that mode and task)*

			LREs	% *	M
Tense	Passage Editing	Group (n = 15)	38	9.4%	2.5
		One-to-one (n = 15)	20	5.6%	1.3
		Individual (n = 15)	11	4.7%	0.7
	Written Composition	Group (n = 15)	7	3.0%	0.5
		One-to-one (n = 15)	1	0.6%	0.1
		Individual (n = 15)	7	5.4%	0.5
Morphology	Passage Editing	Group (n = 15)	24	5.9%	1.6
		One-to-one (n = 15)	23	6.4%	1.5
		Individual (n = 15)	10	4.3%	0.7
	Written Composition	Group (n = 15)	27	11.5%	1.8
		One-to-one (n = 15)	14	8.1%	0.9
		Individual (n = 15)	6	4.7%	0.4
Syntax	Passage Editing	Group (n = 15)	43	10.6%	2.9
		One-to-one (n = 15)	42	11.7%	2.8
		Individual (n = 15)	14	6.0%	0.9
	Written Composition	Group (n = 15)	6	2.6%	0.4
		One-to-one (n = 15)	14	8.1%	0.9
		Individual (n = 15)	11	8.5%	0.7

In PE, individual learners focussed significantly less on grammar (15% of total LREs) than learner-learner (26%) and learner-teacher (24%) dyads. Remarkably, the

total number of grammar LREs in individual learners (35) was just one third of the corresponding figure for groups (105).

An analysis of the three grammar sub-foci (tense, morphology and syntax) reveals more detail regarding the kinds of grammatical issues focussed on in each mode. In PE, group dyads focussed significantly more on tense than their one-to-one and individual counterparts. In morphology, while no significant differences were found between the three modes in either task, in WC the difference between groups and individuals approached significance, with group learners focussing on morphology proportionally more. Regarding syntax in PE, one-to-one dyads produced a significantly higher proportion of LREs than individuals. The trend across the sub-foci, therefore, is that individuals tended to focus on all three grammar sub-foci less than group and one-to-one learners.

While no published studies provide comparable results for individual grammar LREs, the above finding may lend some support to Storch's (1999) claim that collaboration has a positive effect on the grammatical accuracy of texts produced, when compared to individual learners' texts (although it must be stressed that Storch was not observing languaging but rather accuracy). In her study, pairs revised their work and made corrections significantly more than individuals, who completed tasks more quickly and made fewer revisions.

One possible explanation for the significantly lower proportion of grammar LREs in individuals is that grammar may be perceived to be a more difficult area of language to correct, and learners working in isolation may have avoided languaging grammar points, preferring instead to talk about aspects of discourse that they may have perceived as less demanding. Individuals focussed more on discourse than group and one-to-one dyads (although the difference did not quite reach significance), as discussed below. Participants working together, on the other hand, may have had more confidence to approach grammar errors and attempt to resolve these. They may have been more confident raising a question of grammar to which they did not have the answer themselves, knowing there was a chance that their interlocutor may have the answer. Individuals, conversely, may have been unwilling to raise a grammar question to which they knew they could not answer, possibly in order to save face.

Interview data lend some support to this interpretation. Gaspar, for example, commented on his interactions in the group context, and claimed that the presence of his interlocutor, Gabriela, was beneficial:

Me   … did you prefer one activity to the other?
Gaspar   Yeah, I think correcting a piece of paper, that's OK to do in pairs, maybe, he can like erm correcting things, I normally do quite bad at that because I'm bad in the grammar, so she help me out a lot so yeah I think that doing that was good

Ika, who produced no grammar LREs in her individual PE task, believed the presence of a collaborator could have been beneficial:

Me   You did the text correction alone. If you had a partner, do you think you would do the text correction differently, or the same?
Ika   … Hm, maybe I don't know… maybe not the same, because… because I can with another, another person, er… learn about different things, maybe in the grammar… he can show me the grammar things, the thing that maybe I, I not see

The positive association suggested by the present results between dyadic interaction (either learner-learner or learner-teacher) and the proportion of grammar episodes may find a further explanation in the habitual learning environments of learners who choose each of the three modes. Even though course materials in the three modes are essentially the same, group and one-to-one learners may be more accustomed to doing grammar activities in class, as these constitute an important part of lesson plans of teachers following a communicative approach. Even in a skills-focussed lesson, some part of the lesson is usually dedicated to text-based language presentation and practice. It is plausible that individuals working at home alone, conversely, may spend less time on grammar, and more time on receptive and productive skills practice. As a result, they may have been less likely to identify and language grammar items in the tasks in the present study – or simply less interested in the study of grammar – and therefore produced proportionally fewer grammar LREs. There is evidence for this interpretation in interview data from Ismaela:

Me: Were the tasks similar or different from tasks you've done before?
Ismaela: Erm… the writing, the writing is similar because I like to write, er, like composition…   but the correction of the, the… the grammar, this is new for me… usually I prefer to not practise grammar, is not so interesting

Possible associations between habitual learning environments and behaviours, on the one hand, and languaging focus, on the other, could represent an interesting avenue for future research.

5.2.2.3 Discourse: no significant differences between modes.

Table 11 (partially reproduced)
Discourse LREs in group, one-to-one and individual modes
(* percentage of total LREs in that mode and task)

Discourse		LREs	% *	M
Passage Editing	Group (n = 15)	91	22.4%	6.1
	One-to-one (n = 15)	88	24.5%	5.9
	Individual (n = 15)	82	34.9%	5.5
Written Composition	Group (n = 15)	43	18.4%	2.9
	One-to-one (n = 15)	25	14.5%	1.7
	Individual (n = 15)	26	20.2%	1.7

Table 12 (partially reproduced)
Discourse sub-focus in group, one-to-one and individual modes
(* percentage of total LREs in that mode and task)

			LREs	% *	M
Register	Passage Editing	Group (n = 15)	77	19.0%	5.1
		One-to-one (n = 15)	75	20.9%	5.0
		Individual (n = 15)	68	28.9%	4.5
	Written Composition	Group (n = 15)	5	2.1%	0.3
		One-to-one (n = 15)	1	0.6%	0.1
		Individual (n = 15)	2	1.6%	0.1
Text cohesion	Passage Editing	Group (n = 15)	14	3.4%	0.9
		One-to-one (n = 15)	13	3.6%	0.9
		Individual (n = 15)	14	6.0%	0.9
	Written Composition	Group (n = 15)	38	16.2%	2.5
		One-to-one (n = 15)	24	14.0%	1.6
		Individual (n = 15)	24	18.6%	1.6

While no significant differences were found between the three modes in either task in the proportion of LREs focussing on discourse, in PE the difference between individuals and group dyads in discourse-register LREs approached significance, with individuals focussing on register proportionally more. As suggested in the previous subsection, individuals may have been less interested in grammatical features such as

morphology or syntax and instead prioritised pragmatic features of discourse. However, further research would be required regarding learners' perceived importance and prioritisation of features in language tasks.

The sub-foci of discourse LREs, namely register and text cohesion, appeared to some extent to be task-dependent. In PE, a greater proportion of LREs topicalised register rather than text cohesion, as illustrated in this exchange between Olsen and his teacher:

Olsen	OK, "which reminds me", actually I never heard this, which reminds me
Teacher	@ Yeah it's quite informal
Olsen	Informal
Teacher	It's like maybe if you're talking and you say oh, which reminds me er
Olsen	Can I say, could I say like er, in what concerns me, something like this hum, more or less I could do using concern?
Teacher	Using concern?
Olsen	Yeah… I think I
Teacher	Yeah, maybe you could say, erm, con, concerning

The focus on register is predictable given that one of the key characteristics of the PE task was the presence of twelve informal expressions inappropriate in an email to a university. In WC, conversely, a higher proportion of LREs focussed on text cohesion than on register, as exemplified in this LRE between Gordon and Gustavo regarding text organisation:

Gordon	OK, first paragraph…
Gustavo	But we have, this is the first paragraph, no?
Gordon	Yes, well, no, this is like the introduction, like the introduction to our… article
Gustavo	the introduction to article can be of, er, is if this, is this, is this a paragraph here?
Gordon	Yes…
Gustavo	OK then now we need the second, paragraph, maybe we can talk about the health here
Gordon	OK…

Again, this finding was probably to be expected, given that the production of a written composition requires greater attention to aspects such as idea organisation and paragraphing, and less attention to formality (particularly given that no mention of formality was made in the WC task rubric) than a receptive error correction task such as PE. Again, as in García Mayo 2002b, the linguistic features topicalised in LREs –

in this case, specific discursive features – tended to correspond to features targeted by the task.

5.2.2.4 Mechanics: a significantly greater focus on spelling in one-to-one.

Table 11 (partially reproduced)
Mechanics LREs in group, one-to-one and individual modes
(percentage of total LREs in that mode and task)*

Mechanics		LREs	%*	M
Passage Editing	Group (n = 15)	101	24.9%	6.7
	One-to-one (n = 15)	79	22.0%	5.3
	Individual (n = 15)	49	20.9%	3.3
Written Composition	Group (n = 15)	27	11.5%	1.8
	One-to-one (n = 15)	42	24.4%	2.8
	Individual (n = 15)	4	3.1%	0.3

Table 12 (partially reproduced)
Mechanics sub-focus in group, one-to-one and individual modes
(percentage of total LREs in that mode and task)*

			LREs	%*	M
Spelling	Passage Editing	Group (n = 15)	17	4.2%	1.1
		One-to-one (n = 15)	20	5.6%	1.3
		Individual (n = 15)	3	1.3%	0.2
	Written Composition	Group (n = 15)	19	8.1%	1.3
		One-to-one (n = 15)	32	18.6%	2.1
		Individual (n = 15)	0	0.0%	0.0
Punctuation	Passage Editing	Group (n = 15)	21	5.2%	1.4
		One-to-one (n = 15)	11	3.1%	0.7
		Individual (n = 15)	11	4.7%	0.7
	Written Composition	Group (n = 15)	6	2.6%	0.4
		One-to-one (n = 15)	8	4.7%	0.5
		Individual (n = 15)	0	0.0%	0.0
Capitalisation	Passage Editing	Group (n = 15)	54	13.3%	3.6
		One-to-one (n = 15)	45	12.5%	3.0
		Individual (n = 15)	33	14.0%	2.2
	Written Composition	Group (n = 15)	0	0.0%	0.0
		One-to-one (n = 15)	1	0.6%	0.1
		Individual (n = 15)	0	0.0%	0.0
Contractions	Passage Editing	Group (n = 15)	9	2.2%	0.6
		One-to-one (n = 15)	3	0.8%	0.2
		Individual (n = 15)	2	0.9%	0.1
	Written Composition	Group (n = 15)	2	0.9%	0.1
		One-to-one (n = 15)	1	0.6%	0.1
		Individual (n = 15)	4	3.1%	0.3

In three of the four mechanics sub-foci (punctuation, capitalisation and contractions), no significant differences were found between the three modes in the proportions of LREs topicalising each one. However, in the remaining sub-focus – spelling – there was a significantly higher proportion of LREs in one-to-one than in group and individual modes in WC; in PE the difference between one-to-one and individual approached significance, with one-to-one dyads focussing on spelling proportionally more. This finding lends support to results from Storch & Aldosari (2012), in which higher proficiency pairs (of which one-to-one dyads could be considered a type, given the teacher's expertise) focussed on mechanics more than lower proficiency dyads.

It is noteworthy that individuals produced no spelling LREs whatsoever in WC, and a total of just three (1.8% of their total LREs) in PE. This suggests that individuals did not see the spelling errors in the passage or in their own writing. If this is the case, it would appear that a) the presence of a partner, whether a teacher or another learner, is associated with spotting and correcting spelling mistakes, and b) it may be helpful for individual learners to receive training in proof-reading. It is relevant to note here that individual learners had the opportunity to read the PE text, and also produce their written composition, on a computer screen, whereas in the other modes the tasks were done on paper. Given evidence from outside Applied Linguistics (e.g. Wharton Michael 2008) that the medium through which text is presented may be associated with proofreading accuracy, this could represent another area for future research within a language learning context.

One possible explanation for the higher proportion of spelling LREs in one-to-one WC may relate to teacher roles, specifically the role that teachers serve as the corrector of learners' language. The qualitative analysis revealed several instances in learner-teacher interaction in WC in which the teacher read the learner's writing (silently, or subvocalizing) and whenever the teacher observed an error, he or she initiated an LRE consisting of elicitation of a spelling correction from the learner. This exchange between Oscar and his teacher illustrates such interaction:

Teacher	That's OK, that's OK, alright… OK good, what do you think of the spelling here in writing?
Oscar	Ah, maybe with one
Teacher	Yeah
Oscar	One T
Teacher	Good, just one, yeah
Teacher	OK…

Similarly, Onofre and his teacher participated in two such spelling LREs in quick succession:

Teacher	OK, good idea… OK fine so you're going to start writing, good… tell me if you need any help… opportunity is with one or two Ps?
Onofre	Two
Teacher	Good… and society
Onofre	With E?
Teacher	Yeah good…

Teachers may feel that part of their role is to review and correct learners' writing, and interviews with the teachers involved, had they been conducted, would have shed more light on this. Regarding learners, while questionnaire results showed no significant difference between modes in the ratings awarded to sources of feedback (from peers in group classes, teachers in one-to-one and the computer in the online mode) as a reason for choosing their current mode, one-to-one participants rated as "important" the teacher feedback offered by one-to-one learning. Interview data also suggests that one-to-one learners expect and value personalised corrective feedback:

> Me: In the questionnaire you say that getting personalised feedback from your teacher is important for you in your choice of mode. Can you tell me more about this?
> Otto: Yes, of course… because if a teacher is in a group, then he cannot give you all your attention, maybe there are ten or fifteen students, and you need to correct all his mistakes, is a lot… but in a private class, in my private class my teacher he corrects only, only my mistakes
> Me: OK… and how do you feel when the teacher corrects your mistakes?
> Otto: Happy, yes, I want this, this is very important, because this way I learn the right, the right way to, to say it

To summarise, specific modes of study do not appear to be associated with proportions of lexical, discursive, or most types of mechanical LREs. However, grammar LREs appear to be associated with dyadic interaction, in both group and one-to-one classes, rather than individual self-talk, and spelling LREs appear to be associated with one-to-one interaction.

In the following section, I go on to analyse differences between modes in terms of the resolution of episodes.

5.2.3 LRE Resolution

5.2.3.1 Significantly more correct LRE resolution in one-to-one.

Table 13 (partially reproduced)
Correct LRE resolution in group, one-to-one and individual modes
(percentage of total LREs in that mode and task)*

			LREs	%*	M	SD
Correctly resolved	Passage Editing	Group (n = 15)	290	71.4%	19.3	5.7
		One-to-one (n = 15)	357	99.4%	23.8	8.7
		Individual (n = 15)	159	67.7%	10.6	5.4
	Written Composition	Group (n = 15)	196	83.8%	13.1	6.6
		One-to-one (n = 15)	171	99.4%	11.4	6.1
		Individual (n = 15)	115	89.1%	7.7	3.8

Table 15 (partially reproduced)
Identity of resolver in one-to-one mode
(percentage of total LREs in that mode and task).*

		LREs	%*	M
P1 resolves in one-to-one (n = 15)	Passage Editing	199	55.4	13.3
	Written Composition	52	30.2	3.5
Teacher resolves in one-to-one (n = 15)	Passage Editing	67	18.7	4.5
	Written Composition	76	44.2	5.1
Absolute difference between P1 and teacher	Passage Editing	132	36.7	8.8
	Written Composition	24	14	1.6

In both PE and WC, a significantly higher proportion of LREs were correctly resolved in one-to-one than group or individual modes. One-to-one demonstrated an almost perfect resolution rate of 99% of all LREs, across both tasks. This was not simply the result of the teacher, as the "expert" participant, doing most of the resolving: on the contrary, in PE, learners resolved 37% more episodes than their teacher. However, the qualitative analysis revealed that many of these learner resolutions appeared to follow specific, contingent support from the teacher – scaffolding (Wood *et al* 1976) – often in the form of carefully worded questions designed to elicit correct resolution from the learner. This scaffolding typically constituted drawing a learner's attention to a form he or she had not so far noticed:

Teacher	… can you see here this "are there a chance"…
Olimpia	Is there, is there …
Teacher	Great, and what about this here "in Chinese or the Russian"…

Olimpia	I, yes… and the Russian is like the person no, the language is only Russian, like without the
Teacher	Yeah, exactly, yes, that's right, we don't need to use the article with languages

The scaffolding in the first and third lines of the above example may be considered heuristic (Holton and Clarke 2006) or cooperative (Bickhard 1992), given that the teacher, by drawing attention to a form the learner had not noticed, was simplifying the task of error correction by indicating the location of the error. Olimpia's remarks about the use of the definite article with people and languages indicated that her knowledge of this concept was in the process of moving from the spontaneous (Vygotsky 1978, 1987) – with the learner able to use the grammatical structure but not fully understand it – to the scientific (Vygotsky 1978, 1987) – displaying understanding of the underlying system. As typically occurred in teacher-learner interaction in this data, the teacher then attempted to further the learner's scientific knowledge by providing a metalinguistic summary of the point discussed. The present data therefore provides evidence of teachers engaging in scaffolding, the process through which scientific concepts are derivative of mediated collaboration.

The quantitative result that in one-to-one PE 55% of episodes were resolved by the learner suggests that in many cases, support offered by the teacher was sufficient for the learner to resolve the episode him or herself: the scaffolding provided was contingent on the gap in learner knowledge, and faded before the episode was resolved, allowing the learner to resolve it him or herself. In those cases where despite the teachers' attempts to scaffold, the learner was unable to resolve the LRE – perhaps because the form was beyond the learners' ZPD or because mediation was ineffective – the teacher ended up resolving the episode him or herself. In this way, almost no episodes went unresolved, hence the almost perfect correct resolution rate.

In the following extract, for example, despite the teacher's provision of syntactic information about the position of modal *will* in question forms, Olivia was not quite able to resolve the LRE alone, and so the teacher did this for her. Olivia's immediate subsequent repetition of the correct form, which appeared to be directed to herself, "will I have to pay, will I have… to pay…" provides some evidence of internalisation (Vygotsky 1978, 1987), that is, the language artefact shed some of the social function it had served in the question about form posed to her teacher ("OK, how long will I pay?"), and began to serve for the self:

Olivia	How long I… *cuánto tiempo* [how long]
Teacher	Yeah how long will I have
Olivia	How long I, I, I'll have no, ah…
Teacher	Because it's a question, you have to have the auxiliary first, so how long will I have
Olivia	Ah how long will
Teacher	Yeah
Olivia	OK, how long will I pay?
Teacher	Erm
Olivia	Will I have, will I pay
Teacher	Yeah how long will I have to pay
Olivia	Have to pay, will I have to pay, will I have… to pay… the rest of the money yeah
Teacher	Good

The interaction evidences a complex interweaving of teacher metalanguage and language models, and learner questioning (social speech) and internalisation (private speech). An analysis of the distribution of these functions in teacher-learner talk within LREs would make for interesting future research.

5.2.3.2 Structural differences in interaction: LRE initiation, resolution and scaffolding.

Table 14
Identity of initiator in group and one-to-one modes
(* percentage of total LREs in that mode and task).

		LREs	%*	M
P1 initiates in group (n = 15)	Passage Editing	240	59.0%	16.0
	Written Composition	97	41.5%	6.5
P2 initiates in group (n = 15)	Passage Editing	166	41.0%	11.1
	Written Composition	137	58.5%	9.1
Absolute difference between P1 and P2	Passage Editing	74	18.0%	4.9
	Written Composition	40	17.0%	2.7
P1 initiates in one-to-one (n = 15)	Passage Editing	318	88.6%	21.2
	Written Composition	67	39.0%	4.5
Teacher initiates in one-to-one (n = 15)	Passage Editing	41	11.4%	2.7
	Written Composition	105	61.0%	7.0
Absolute difference between P1 and T	Passage Editing	277	77.2%	18.5
	Written Composition	38	22.0%	2.5

The qualitative analysis of interaction revealed important structural differences between one-to-one interaction and pairwork in group mode, in terms of the initiation and resolution of LREs and the use of scaffolding.   The following one-to-one

exchange, first discussed in section 5.2.2.4, was typical of one-to-one dialogues in the present data in that it contained evidence of the triadic IRF (Sinclair & Coulthard 1975) or IRE (Mehan 1979) sequence of interaction: the teacher initiated an episode by eliciting information about form, the learner responded and resolved the episode, and the teacher provided feedback.

Teacher	OK, good idea… OK fine so you're going to start writing, good… tell me if you need any help… opportunity is with one or two Ps?
Onofre	Two
Teacher	Good… and society
Onofre	With E?
Teacher	Yeah good…

While the initiation and response stages of such one-to-one sequences also occurred in student-student dyads in group mode, there were two key differences with one-to-one interaction. Firstly, when a learner initiated an LRE in one-to-one it was almost always because he or she had noticed a gap between his or her current linguistic knowledge and the target language feature (a pattern noted by Gass & Mackey 2007 and Gilabert & Barón 2013), whereas when a teacher initiated an LRE, it was usually to elicit language that the teacher felt the learner may know. Secondly, in learner-learner interaction in group mode there was rarely any subsequent feedback, other than a phatic utterance such as "OK" or yeah", as illustrated in this exchange between German and Guillermina:

German	smoking, it, should, be
Guillermina	banned
German	banned?
Guillermina	banned *con dos n's* [with two n's]
German	Ah OK

In one-to-one interaction there was also evidence of the extra fourth step in tutoring contexts proposed as an addition to the IRF sequence by Graesser *et al* (1995). The fourth step consists of engaging in a series of exchanges with the learner, usually of between five and ten turns, in order to scaffold his or her understanding. In the following PE excerpt, Oscar's teacher elicited a more formal way to close the email. When Oscar paused, the teacher appeared to interpret that Oscar needed support, and therefore provided scaffolding by prompting "Maybe something like I look", after which Oscar was able to produce the expression without further

assistance. From this point, the teacher's contributions consisted only of evaluation, in the form of praise for Oscar's language:

Teacher	Alright, what erm, with this here "Bye for now and see you soon", do you think that sounds
Oscar	It sound, sounds more informal yeah
Teacher	How could you finish an email in a more formal way?
Oscar	Let's if I can remember the…
Teacher	Maybe something like I look
Oscar	I'm looking forward to
Teacher	Good
Oscar	To the next time
Teacher	Excellent, good…
Oscar	Er… OK
Teacher	OK, good yeah, so I'm looking forward to the next time we'll see each other, very nice

However, there was no evidence in the present data of the fifth and final step in tutoring interaction proposed by Graesser *et al* (1995), in which the tutor gauges the learner's understanding of the answer by inviting the learner to evaluate his or her own level of comprehension. This could have been achieved, for example, if the tutor had asked a concept checking question, or encouraged the learner to say how confident he now felt with the target form.

The preceding qualitative examples of structural differences between exchanges in group and one-to-one modes are supported by the quantitative analysis of the identity of the initiator and resolver of dyadic LREs. In PE, 89% of one-to-one episodes were initiated by the learner rather than the teacher, whereas in group interaction, the difference between participants was only 18%. Since LREs arise from gaps in knowledge, and tutors do not have any gaps, it stands to reason that one-to-one students should do most of the initiating. Likewise, one-to-one learners resolved 37% more LREs than their teacher, a significantly greater difference than that identified in learner-learner interaction in group mode.   This difference can be attributed to teachers allowing learners time to attempt to resolve episodes alone before becoming involved in the LRE and, when necessary, providing support. In this way, any tutorial support eventually provided usually took the form of scaffolding, since a) it was contingent on learners' current ability; that is, the amount of support was dependent upon the teacher's ongoing assessment of the learner's current level, and if the learner needed no support in identifying and / or resolving an error, none was given; and b)

the support demonstrated a transfer of responsibility from the teacher to the learner, with the eventual goal that the learner might be able to complete the task autonomously (Van de Pol *et al.* 2010).

In the following extract, for example, Ofelia was guided towards resolutions via the provision of scaffolding in the form of prompts and an L1 translation:

Ofelia	First this Hi
Teacher	Hm
Ofelia	Is like a bit informal
Teacher	OK, what do you think would be better?...
Ofelia	I really don't know how to make it better but,
Teacher	Hm, if you write a letter or an email, usually, how do you begin?... Is there an expression in English like, a bit like *estimado* [dear]
Ofelia	Ah like, Dear
Teacher	Yeah, exactly, so you could change that for Dear
Ofelia	I wasn't sure if it was too personal or not, I mean
Teacher	Yeah, you can use Dear for, for er… yeah for a formal email, a formal letter, that's fine
Ofelia	OK…

The preceding example of "negotiation of form" (Lyster & Ranta 1998), in which corrective feedback was provided in order to encourage self-repair, contrasts with other LREs in Ofelia's transcript, such as the following series of very brief episodes comprising corrections both initiated and resolved by the student. While the teacher responded to Ofelia's corrections by offering positive feedback and metalanguage, none of the teachers' utterances provided a correction of the error, as the teacher seemed aware that Ofelia could manage to do this herself. In other words, the decision not to provide the answer was contingent on the teacher's ongoing assessment of what the learner was able to do without help:

Ofelia	OK, If I give you a call
Teacher	Yeah
Ofelia	On the phone number… is there a chance
Teacher	Exactly, very good, cos chance is singular
Ofelia	Yeah… and tell me more I mean is there a chance you could give me more information
Teacher	That's better yeah…
Ofelia	Er here you could like looking forward
Teacher	OK good
Ofelia	Cos it sounds like too informal
Teacher	I agree yeah , so I'm looking forward… I'm looking forward to…
Ofelia	Erm… to studying
Teacher	Good

Ofelia	To studying in your university
Teacher	Great…

Given the evidence that learner-initiated FonF may be more facilitative of learning than teacher-initiated FonF (Baralt *et al* 2016), the prominence of learner-initiated episodes in one-to-one suggests learning benefits. It is also illustrative of the asymmetric (Chi *et al* 2001) and complementary (Philp *et al* 2014) nature of one-to-one interaction, compared to the more symmetrical learner-learner relationship in group mode, in which participants had more equal roles.

5.2.3.3   Initiator differences less significant in WC.   Differences between group and one-to-one modes regarding the initiator of LREs were less significant in WC than in PE. In WC, quantitative results presented evidence of a more even balance of learner-initiated (39% of total) and teacher-initiated LREs (61%) in one-to-one interaction, and no significant difference between group and one-to-one interaction in terms of the proportion of LREs initiated by each participant. In PE, on the other hand, one-to-one learners initiated 69% of the LREs. This is probably because PE was essentially a sequence of items for learners to correct, with the expectation that learners could notice the gap between the error and the target form, and correct the error. Therefore learners, not teachers, did most of the initiation of episodes in one-to-one: they were the gap-spotters. A further possible reason for the higher learner initiation in PE is teachers' and learners' task expectations: the learner is often expected to "get on with" a text correction task without a teacher's help, whereas in WC there may be an expectation that a teacher's role is to correct. In WC, moreover, the forms topicalised in LREs derived from problems in learner's language, rather than errors seeded in a task, and these problems were more likely to require the teacher to identify them: here, the teachers were the gap-spotters. This is evident in the statistic that in WC there was a tendency towards episodes initiated by the teacher and resolved by the learner, with only 8% of episodes being both initiated and resolved by the learner. The qualitative analysis of episodes that were teacher-initiated and learner-resolved revealed these mainly to consist of gap-seeking elicitation moves, in which the teacher asked a question in order to provide the learner with an opportunity to resolve the LRE him / herself, as demonstrated by Olga and her teacher:

		Teacher	Yeah, yeah yeah, OK, this is a letter so how do we finish?
		Olga	A letter
		Teacher	It's a letter yeah to a newspaper
		Olga	Er OK ah… I put the same no yours sincerely
		Teacher	Yeah that's right…

In WC, most of these gap-seeking moves occurred towards the end of the interaction, after the learner had had an opportunity to identify language problems independently first. While learners in student-student dyads in group mode also asked each other questions, these were pragmatically quite different from those found in one-to-one interaction, as they stemmed from a recognition of a gap in learners' own knowledge, rather than a teacher's attempt to seek a gap, as exemplified by Gordon and Gustavo:

		Gustavo	How many words is this needs to have?
		Gordon	I don't know… I don't know it is not say here how many words
		Gustavo	Is very short, no ?
		Gordon	I don't know … XX @

5.2.3.4 Learner–learner resolution: more cooperative than collaborative.

Table 15
Identity of resolver in group and one-to-one modes
(percentage of total LREs in that mode and task).*

		LREs	%*	M
P1 resolves in group (n = 15)	Passage Editing	118	29.1	7.9
	Written Composition	64	27.4	4.3
P2 resolves in group (n = 15)	Passage Editing	93	22.9	6.2
	Written Composition	86	36.8	5.7
Absolute difference between P1 and P2	Passage Editing	25	6.2	1.7
	Written Composition	22	11.2	1.5
Collaborative resolution in group (n = 15)	Passage Editing	127	31.3	8.5
	Written Composition	73	31.2	4.9
P1 resolves in one-to-one (n = 15)	Passage Editing	199	55.4	13.3
	Written Composition	52	30.2	3.5
Teacher resolves in one-to-one (n = 15)	Passage Editing	67	18.7	4.5
	Written Composition	76	44.2	5.1
Absolute difference between P1 and teacher	Passage Editing	132	36.7	8.8
	Written Composition	24	14	1.6
Collaborative resolution in one-to-one (n = 15)	Passage Editing	91	25.3	6.1
	Written Composition	44	25.6	2.9

In learner-learner dyads in group mode, LRE resolution was more evenly distributed between the two participants than in one-to-one: in both tasks, the difference between P1- and P2- resolved episodes was less than 15%, which suggests that on the whole, no one learner was dominant in resolution. Furthermore, episodes coded as collaboratively resolved – LREs in which both participants contributed in some way towards the resolution, beyond a phatic response – constituted nearly a third of all episodes, compared to a one-to-one figure of around a quarter (it should be noted, however, that this difference did not reach significance).

One example of an episode coded as collaboratively resolved occurred between Giordano and Gina, who together agreed on the substitution of the adjective "interesting" for the less formal "cool". Giordano contributed to the resolution by suggesting the adjective, while Gina contributed by providing the justification for the substitution:

Giordano	OK, "so it'll be"
Gina	"be really cool"
Giordano	it could be
Gina	interesting, not really cool?
Giordano	because it's like, a suggested
Gina	yes, and I would change really cool for interesting
Giordano	OK, it's more formal
Gina	Yes
Giordano	Ah … OK?
Gina	Yes…

However, most learner-learner episodes – 52% in PE and 64% in WC – were resolved not collaboratively but by one participant only. There were frequent instances in which one of the learners was less participative than his or her interlocutor, with the latter initiating and resolving episodes without any contribution made by their partner beyond repetitions and / or phatic responses. While typologies of interaction (e.g. Storch 2001a, 2002) were not employed in data analysis in the present study, this finding suggests that learner-learner interaction tended not to be collaborative but was rather cooperative (Tan *et al* 2010). In cooperative interaction, both learners interact with each other and perform the task together, but, rather than collaboratively contributing towards the co-constructed resolution of LREs, the end result is the addition of two largely individual contributions.

Cooperative, rather than collaborative, interaction is illustrated in the following exchange between Gioconda and Gonzalo, in which Gioconda both initiated and correctly resolved two episodes – the first a lexical episode in which she suggested replacing *give you a buzz* with *give you a call*, and the second a grammatical episode in which she stated a preference for modal *would* over *can* in a polite request. Gonzalo's contributions were limited to reading aloud from the text, repeating Gioconda's utterances, or simply agreeing by saying "yes".

Gioconda	(XX) Yes, because he ask for more information, but I think this is, um… "If I give you a buzz on the phone number", do you know what a buzz is? …
Gonzalo	Erm a buzz
Gioconda	OK, I think it's, it's a, it could be something like a call, or a message
Gonzalo	Yes
Gioconda	"On the phone number"…
Gonzalo	"On the phone number you put in your email, are there a chance you can tell me more"
Gioconda	Erm, you can tell me more, this is, is this I think this is, this is wrong, because
Gonzalo	"You put" …
Gioconda	OK, I don't know how to correct this, but we can say
Gonzalo	Yes
Gioconda	Erm, would, you, tell, me

While Gonzalo was cooperative, his contributions contributed little to the resolution of episodes, which Gioconda could almost certainly have reached without the presence of an interlocutor. This raises a potential question about the value of pairwork for participants who assume a dominant role.

5.2.3.5 *No significant differences in correct resolution between group and individual.*

Table 13 (partially reproduced)
Correct LRE resolution in group, one-to-one and individual modes
(* percentage of total LREs in that mode and task)

			LREs	%*	M	SD
Correctly resolved	Passage Editing	Group (n = 15)	290	71.4%	19.3	5.7
		One-to-one (n = 15)	357	99.4%	23.8	8.7
		Individual (n = 15)	159	67.7%	10.6	5.4
	Written Composition	Group (n = 15)	196	83.8%	13.1	6.6
		One-to-one (n = 15)	171	99.4%	11.4	6.1
		Individual (n = 15)	115	89.1%	7.7	3.8

No significant differences were found in either task between group and individual modes in terms of proportions of LREs that were correctly resolved. This finding is contrary to Kim (2008), in which KSL learners working in dyads resolved a significantly higher proportion of episodes correctly than learners working individually, and where the pooling of linguistic resources appeared to result in greater ability to correctly resolve LREs. Individual learners, conversely, tended to leave LREs unresolved, since they had no resources to draw on other than their own knowledge, the gap in which had given rise to the LRE in the first place. The association between pooling of resources and correct LRE resolution is also supported by findings from Donato (1994), Storch (2005) and Fernández Dobao (2014), although it should be noted that of these, only Kim (2008) compared LRE resolution between individuals and learner-learner dyads.

An important factor to consider when interpreting results from the present study is that the proportion of correctly resolved episodes in the individual mode, while not significantly different from the group mode, was based on significantly fewer total LREs. This may suggest that individual learners did not even attempt to initiate episodes – at least not vocally – that they knew they would not be able to resolve, preferring instead to focus on items they felt they had the linguistic resources to approach. It is possible that individual learners did in fact initiate silently many more episodes than they verbalised, but preferred not to begin vocalising these if they were unsure as to how to resolve them, in an attempt to save face. There was some evidence of this in the protocols, such as this instance in Illanca's think-aloud while completing her written composition:

Illanca: "OK let me think… yes this is OK".

It seems highly likely that there were unspoken thoughts in the pause between "think" and "yes", and these may well have constituted an LRE. The use of the think-aloud therefore appears to constitute a limitation, discussed further in the following chapter, that should be borne in mind when interpreting data from individual learners.

The ability of individual learners to resolve their own LREs may stem from the ownership of the learner experience and the development of self-monitoring learning strategies developed in independent study. If so, this would appear an important

pedagogical implication for the design of self-study courses, which could usefully encourage learners to monitor their own language and be on the lookout for gaps, considering how to make their language more accurate, appropriate or sophisticated.

5.2.3.6 *Incorrect LRE resolution: uncommon across modes and tasks, but significantly lower in one-to-one.*

Table 13 (partially reproduced)
Incorrect LRE resolution in group, one-to-one and individual modes
(* percentage of total LREs in that mode and task)

			LREs	%*	M	SD
Incorrectly resolved	Passage Editing	Group (n = 15)	48	11.8%	3.2	2.7
		One-to-one (n = 15)	0	0.0%	0.0	0.0
		Individual (n = 15)	24	10.2%	1.6	2.4
	Written Composition	Group (n = 15)	27	11.5%	1.8	1.9
		One-to-one (n = 15)	1	0.6%	0.1	0.3
		Individual (n = 15)	7	5.4%	0.5	0.5

Incorrect LRE resolution was relatively uncommon across the three modes and two tasks. The highest proportion of incorrectly resolved episodes was found in group PE, although even there only 12% of episodes were incorrectly resolved. This may constitute evidence that on the whole, learners in all modes had sufficient linguistic resources to resolve the LREs that arose. The low proportion of incorrectly resolved episodes supports findings from other studies in which incorrectly resolved LREs were uncommon (LaPierre 1994; Leeser 2004; Storch & Aldosari 2012; Basterrechea & García Mayo 2013; Edstrom 2015).

It is important to note, however, that significant differences were found between modes. In both PE and WC, a significantly higher proportion of episodes were resolved incorrectly in group than in one-to-one mode, although this finding is perhaps unsurprising given that a significantly higher proportion were correctly resolved in one-to-one. As established above, the teacher in one-to-one interaction almost always ensured the correct resolution of an episode before the dyads moved on to the next. In group interaction there were more instances of learners not quite reaching the correct resolution, such as this lexical LRE in which Gregorio and Giselda proposed two possible adjectives, "high" and "strong", to collocate with the

noun "importance", but did not manage to propose the appropriate collocate "great" or "significant":

Gregorio	We have this opinion… because… the importance of individual freedom is very… it is very… high
Giselda	I think is better, is very strong… the important, is very strong…
Gregorio	OK, very strong, I agree…

Also noteworthy is that in WC, the difference between one-to-one (1% of LREs resolved incorrectly) and individual (5%) was not significant. This may again point towards the possibility that individual learners did not vocally initiate episodes that they could not resolve correctly, possibly in order to save face. If group learners resolved 12% of their WC episodes incorrectly, despite being able to pool their linguistic resources, evidence from the literature (Donato 1994; Storch 2005; Kim 2008; Fernández Dobao 2014) would suggest that individual learners, with only their own resources to draw on, would produce even more incorrectly resolved episodes – assuming, of course, that they were verbalising everything they were thinking. Again, this suggests a potential limitation of the think-aloud protocol as a data collection instrument, but may also point towards the development of self-monitoring learning strategies developed by individual learners in independent study.

5.2.3.7 Unresolved LREs: a significantly lower proportion in one-to-one.

Table 13 (partially reproduced)
Unresolved LREs in group, one-to-one and individual modes
(* percentage of total LREs in that mode and task)

			LREs	%*	M	SD
Unresolved	Passage Editing	Group (n = 15)	68	16.7%	4.5	3.6
		One-to-one (n = 15)	2	0.6%	0.1	0.5
		Individual (n = 15)	52	22.1%	3.5	2.5
	Written Composition	Group (n = 15)	11	4.7%	0.7	0.7
		One-to-one (n = 15)	0	0.0%	0.0	0.0
		Individual (n = 15)	7	5.4%	0.5	0.9

A logical consequence of the almost perfect correct resolution rate in one-to-one is that a significantly lower proportion of LREs was left unresolved in one-to-one than in group, in both tasks. The highest proportion of unresolved LREs occurred in individual PE, where over a fifth of all episodes were left unresolved. Qualitative analysis of individual PE data revealed occurrences of episodes in which a problem

was identified, but no alternative form was suggested, and the LRE therefore went unresolved. This is illustrated in the following extract from Ilroy's PE think aloud protocol:

Ilroy: like Hi is not formal … and me, and if this was, like… thanks a million, this is not formal… if, and here brilliant, OK this brilliant here we can't say brilliant is like, this… and then give you a buzz, If I give you a buzz, this buzz is definitely, definitely not formal, so we can't say this in an e-mail to a university…

A similar tendency was observed in Ida's response:

Ida: OK, so probably, I wouldn't start with er "Hi", if is to a, a, I don't know, a teacher from a university, I would start probably in a different way, then, I think that "thanks a million" is not, like, the perfect way to say, to thank a teacher from a university

The passage editing written responses from these learners also demonstrated a lack of alternative forms proposed, with the forms mentioned in the protocol either not marked on the paper or simply circled or underlined. While the rubric asked participants to correct the problems they found, and participants saw a video of the task modelled for them, it seems that many individual learners felt it was sufficient to identify an error, and sometimes comment on why the form was inappropriate. In one-to-one and group interaction, conversely, if one participant identified an error without correcting it, there was an interlocutor there who could suggest or elicit a correction, as often occurred in one-to-one dialogue. This suggests that the presence of a interlocutor may not only have a significant positive effect on the number of LREs produced, but may also be beneficial for task procedure in the event that a learner misunderstands the rubric. If the study were repeated, it may be useful for individual learners to also have a written example of a correction to follow.

Group learners also left PE LREs unresolved, but to a lesser extent (17% of total LREs) than individuals (22%). In some cases this was for the same reason as in individuals, that is, errors were identified but no resolution was proposed. However, learner-learner interaction in group mode also contained examples of one participant asking a question about a form, and this being either ignored or not understood by the second participant, who moved the discussion on and left the previous form unresolved. German's question regarding the capitalization of *UK*, for example, was

ignored by Guillermina, who was focusing on a subsequent structure, *looking forward to + in*:

| German | It's correct, "I'm sure the information", I'm sorry, "the formation will be brilliant, I'm really looking forward to studying in the UK" UK is here is right? in capital letters, here may   I, |
| Guillermina | looking forward |

German	Here we have the
Guillermina	Yeah but to study, erm
German	studying,
	Just studying, I'm writing

Also worth highlighting are the lower proportions of unresolved episodes in WC than in PE. It seems that the productive nature of the written composition task necessitated a resolution of LREs in order for the writing process to continue, whereas in PE it was possible to move on to the next error even if a previous episode had not been resolved.

To summarise the main findings regarding LRE resolution, a significantly higher proportion of episodes were correctly resolved in one-to-one than in group or individual modes. The learner in one-to-one dyads resolved a higher proportion of LREs than either participant in group dyads, but many of these resolutions were scaffolded by the teacher, who provided specific, contingent support and, in the event that this did not lead to correct resolution, resolved the episode him or herself. Structural differences were identified between one-to-one and group modes in terms of interactional exchanges, with one-to-one interaction characterised by teacher elicitation and feedback, in the form of praise and / or correction. While between a quarter and a third of resolutions in one-to-one and group modes were coded collaborative, the analysis revealed that many learner-learner episodes in group mode were in fact cooperative, that is, the sum of two individual responses rather than a collaborative co-constructed response. While individual learners correctly resolved a similar proportion of episodes to group learners, this proportion was based on a significantly lower number of total LREs, suggesting individual learners may not have verbalised episodes that they knew they would be unable to resolve. Incorrect resolution was uncommon across tasks, suggesting resolutions were within learners' capabilities in all modes, and unresolved episodes were more common in the

individual mode, which suggests it may be useful for individual learners to also have a written example of a correction to follow.

In the following section, differences between modes are discussed in terms of learners' engagement within LREs.

5.3   Research Question 2: How does Learners' Engagement in LREs Differ between the Three Delivery Modes?

LREs were analysed not only for number, focus and resolution, but also for the depth of learner engagement observable in each episode. Engagement was determined to be either limited, elaborate, or limited + elaborate (this final option was only possible in dyadic interaction, i.e. in group and one-to-one modes).

Limited engagement was observable in LREs in which a linguistic item was stated without further deliberation, including when, in student-student or student-teacher dyads, there was some phatic utterance such as "OK" or "yeah", but no further evidence of engagement (Storch 2008).

Elaborate engagement was observable in LREs in which a metacognitive self-regulation strategy was observable (in the case of dyads, strategies had to be observable in both participants). Such strategies included elaborating on linguistic choices made, for example by seeking or providing metalinguistic descriptions and / or justifications for these choices; flexibility in problem solving, for example by generating options; creating connections, for example by generating rules; attempting to go further than the task requirements of the task; and demonstrating a positive attitude and staying on-task in the face of difficulties or distractions.

Elaborate + limited engagement was observable in dyadic episodes in which one participant demonstrated elaborate engagement and the other participant demonstrated limited engagement.

5.3.1 A Significantly Higher Proportion of Elaborate Engagement in Individuals, and a Significantly Lower Proportion of Limited Engagement in One-To-One.

Table 17
Engagement in LREs in group, one-to-one and individual modes
* percentage of total LREs in each mode and task

			LREs	%*	M
Elaborate	Passage Editing	Group (n = 15)	126	31.0%	8.4
		One-to-one (n = 15)	131	36.5%	8.7
		Individual (n = 15)	151	64.3%	10.1
	Written Composition	Group (n = 15)	54	23.1%	3.6
		One-to-one (n = 15)	32	18.6%	2.1
		Individual (n = 15)	35	27.1%	2.3
Limited	Passage Editing	Group (n = 15)	177	43.6%	11.8
		One-to-one (n = 15)	117	32.6%	7.8
		Individual (n = 15)	84	35.7%	5.6
	Written Composition	Group (n = 15)	144	61.5%	9.6
		One-to-one (n = 15)	95	55.2%	6.3
		Individual (n = 15)	94	72.9%	6.3
Elaborate + Limited	Passage Editing	Group (n = 15)	103	25.4%	6.9
		One-to-one (n = 15)	111	47.4%	7.4
	Written Composition	Group (n = 15)	34	14.5%	2.3
		One-to-one (n = 15)	45	26.2%	3.0

In PE, individuals produced significantly more LREs characterised by elaborate engagement (64% of their total LREs) than group (31%) or one-to-one (37%). Many of these instances of individual elaborate engagement took the form of a justification for a correction based on the degree of formality of the expression, as demonstrated in Irene's PE response:

> Irene: which reminds me, could you, because can is quite informal so could you, give me …

Similarly, Ingrid justified an alternative for "with you" based on her perception of the formality of register:

> Ingrid: I think in this sentence is "if I would come to study with you, how much would I need to pay in total", it's, is not a correct form, because it's very informal to say to speak with the university so it think it's better if we put for example if I would come to study in your university

It is important to note, however, that the significantly higher percentage of elaborate engagement LREs in the individual mode is most likely a result of there being no elaborate + limited engagement option for individuals. In group and one-to-one modes, conversely, elaborate + limited engagement accounted for over a quarter of LREs. Engagement in group and one-to-one modes was only coded as elaborate when both participants demonstrated elaborate engagement, which probably resulted in significantly fewer episodes being coded elaborate than for individual learners.

A more telling statistic, given its applicability to all three modes, is the proportion of episodes characterised by limited engagement. Limited engagement differed to a far lesser extent between modes than elaborate engagement, representing between 36% and 44% of PE episodes, and 62% to 73% of WC episodes. Of the six pairwise comparisons made between the three modes across the two tasks, there were two statistically significant differences in limited engagement: a higher proportion of limited engagement LREs in group than one-to-one in PE, and a higher proportion in individual than one-to-one in WC. The other four comparisons produced non-significant differences. On the whole, then, limited engagement characterised LREs to a broadly similar extent across the three modes, with slightly less limited engagement observed in one-to-one.

The qualitative analysis of one-to-one episodes revealed possible reasons for this pattern. There was a tendency towards interactions in which the teacher sought justifications for corrections made by the learner, and the learner responded using metalanguage; hence, elaborate engagement in both participants. One example of such interaction occurred between Oscar and his teacher, in which Oscar initiated and correctly resolved a grammatical LRE involving a second conditional sentence. Oscar was already moving on to subsequent forms, without having elaborately engaged in the episode, when the teacher interrupted to elicit metalanguage from Oscar regarding the correction. This seeking of metalanguage constituted the start of the teacher's elaborate engagement, which concluded in his paraphrasing comment at the end of the LRE. Oscar's elaborate engagement was evident in his ability to justify the correction by naming the structure. It seems likely that had the teacher not elicited it, the metalanguage would not otherwise have been spontaneously produced by Oscar, and his engagement would have remained limited:

Teacher	Then if I
Oscar	If I would come to study with you, how much… if I came
Teacher	Very good, yeah…
Oscar	Came to study with you, how much would I need to pay in total
Teacher	Yeah why, why, why is it came
Oscar	Came because it's the… the second conditional
Teacher	very good
Oscar	To clause the present simple or the past simple
Teacher	Exactly so the clause with if you need the past simple not would you can't have if would, good

The qualitative analysis therefore revealed that teacher engagement often consisted of seeking justifications to check learners' understanding; learner engagement, on the other hand, often consisted of providing rather than seeking justifications, in response to the teachers' use of questions.   This marked a qualitative difference with elaborate engagement in learner-learner episodes in group mode, in which both learners tended to provide justifications rather than seek them.   The following exchange between Guillermo and Giuliana was characterised by elaborate engagement in both learners, who discussed and justified their responses to the expression "which reminds me":

Giuliana	Yes, these languages in your university, which reminds me
Guillermo	No, it's not remind
Giuliana	No no
Guillermo	Which
Giuliana	Remind me… *me recuerda* [it reminds me] remind me, erm, because it's plural languages, it's plural so is it's remind me
Guillermo	No
	Because remind me er is you say remind me something, I forgot to close the door
Giuliana	Remind
	me that I go to the bakery or something like that
Guillermo	So doesn't make sense here we can say in another, in another way
Giuliana	*Me recuerda*, [it reminds me] which reminds me

Despite these qualitative differences in elaborate engagement episodes between group and one-to-one modes, it is interesting to note that there were no statistically significant quantitative differences between them: while structurally different, the proportions were similar.   This suggests that dyadic interaction, whatever the identity of the interlocutor, is not only a context in which numbers of LREs are statistically similar between group and one-to-one modes, but in which language can be discussed in an elaborate way by both participants.

The elaborate engagement data may be explained by Vygotskian sociocultural theory. LREs characterised by elaborate engagement may be considered evidence that concepts had been internalised by learners; that is, they had developed from being spontaneous concepts that learners were able to utilise without fully understanding their form, to scientific concepts, about which learners had some formal awareness. In the previous example, Giuliana demonstrated spontaneous knowledge of "remind" by indicating she was aware of the meaning (she provided a translation in her L1), but also demonstrated scientific awareness by proposing that the verb form ought to be singular. Had there been no elaborate engagement evidenced by the presence of metalanguage, it would have been more difficult to demonstrate that the form had yet moved beyond a spontaneous concept.

It is also noteworthy that elaborate engagement was not restricted to certain LRE foci. It might be assumed that some types of LRE – those focussing on register, for example – would be characterised by elaborate engagement, in the form of a mention of formality, and others – for example mechanics – would be characterised by limited engagement, as there is not always a great deal to discuss when correcting a contraction or punctuation error. Storch (2008), for instance, found that level of engagement appeared to depend on LRE focus: verb morphology, article choice and word forms involved elaborate engagement, probably because they are structurally more difficult and require consideration of rules, meaning, and verb-tense consistency; LREs about prepositions, on the other hand, demonstrated less elaborate engagement, as the correct preposition is lexically rather than semantically determined. In the present study, however, there were in fact many instances of mechanics LREs that involved lengthy and elaborate discussions. Gualterio and Grisela, for example, demonstrated elaborate engagement regarding the capital S in *Spain*:

Gualterio	"The language learning is really important for students here in Spain"… language learning, OK… not just English, ah, ah but English is also, is a… English is with a capital letter no?
Grisela	Languages
Gualterio	Yeah, English
Grisela	Spanish
Gualterio	English, Spanish, with a capital letter, I think yeah
Grisela	I think cos
Gualterio	English with a capital letter
Grisela	In Spanish is not…
Gualterio	No, "but other languages too"…

Grisela	I think is with…
Gualterio	Yeah this is the same we are, we are now, we are here now…

Further ahead in their PE response, they went on to engage in an elaborate episode regarding spelling – a focus that might be assumed to be more closely related to limited engagement – by drawing on the isomorphic example of *Budget Rent-a-Car* and testing out alternatives with letters B and D in order to resolve the episode:

Gualterio	A budget?
Grisela	Approximate cost of the course or a budget, budget
Gualterio	Yeah?...
Grisela	Some? No…
Gualterio	*Con D* [with D]*?*
Grisela	*Con D* [with D]
Gualterio	*Creo que sí…* [I think so] bud, Budget
Grisela	*Sí,* [yes] with D
Gualterio	Budget, budget?...
Grisela	Yeah
Gualterio	I think is like this… I think a budget, a budget… @ ah
Grisela	Budget
Gualterio	I think, I think is like this, budget, budget, ah no no no I I think is like this
Grisela	Budget Budget Rent a Car Budget
Gualterio	Yeah?
Grisela	Maybe with G yeah but is definitely with D
Gualterio	yeah yeah yeah you're right, right here, budget, well
Grisela	Budget…

A pedagogical implication is that even a language task that is mechanical in nature, such as correcting spelling or capitalisation errors, has the potential to stimulate LREs in which there is elaborate engagement.

5.3.2 Elaborate + Limited Engagement LREs: Evidence that Engagement in Both Participants is not Necessary for Languaging and Resolution. The presence of elaborate + limited LREs in dyadic interaction suggests that it is unnecessary for both participants to be elaborately engaged in order for an episode to be languaged and resolved. If one participant demonstrates elaborate engagement by providing a justification or generating options, for example, the other participant may feel it is unnecessary to say more about the episode in a way that would constitute elaborate engagement. In this exchange between Gianfranco and Gilberto, for instance, Gianfranco demonstrated elaborate engagement by producing metalanguage, and by referring to the formality of register as a justification for

avoiding contracted forms. Gilberto participated in the exchange, but in a way that demonstrated limited engagement only:

Gianfranco	I don't know… this really cool, it'll be… not as an apostrophe, so, that is, it must be written as it will be really cool
Gilberto	Yes?
Gianfranco	Yes, if it is formal
Gilberto	OK…

The finding that around a quarter of learner-learner PE episodes were characterised by elaborate + limited engagement, yet over 70% of LREs were correctly resolved, mirrors Storch's (2008) findings, in which around a third of LREs produced by dyads performing a text reconstruction task were elaborate + limited, yet 80% of LREs were resolved correctly. In both Storch's and the present study, it was not necessary for both participants to be elaborately engaged in order for episodes to be correctly resolved.

Regarding elaborate + limited engagement in one-to-one episodes, in PE there were frequent instances of LREs both initiated and resolved by the learner (these accounted for over half of one-to-one PE episodes), and in which the learner was engaged in a limited way only. The teacher, conversely, tended to "add" elaborate engagement to the LRE by summarising the learner's output in a way that provided metalinguistic information. Olimpia, for instance, correctly resolved without elaborate engagement the following episode regarding a preference for avoiding ellipsis. The teacher provided the metalanguage that constituted his elaborate engagement; Olimpia agreed, but still not in a way that constituted elaborate engagement:

Olimpia	Maybe we need Dear, and this "just" and this "just writing" we cannot say this "just writing" we need and "I am just writing"
Teacher	Good, so you want to have a subject and the verb here yes
Olimpia	Yes…
Teacher	OK what else …

The quantitative analysis revealed a tendency towards this type of discursive structure in one-to-one interaction. In one-to-one WC, the proportion of episodes characterised by elaborate engagement in the teacher and limited engagement in the learner (23%) was much higher than the proportion of episodes characterised by elaborate engagement in the learner and limited engagement in the teacher (3%). This

suggests that teachers may feel it is part of their role and purpose in the activity to summarise or reinforce linguistic choices made, by elaborating on learners' output. This tendency is particularly apparent in a task such as WC, in which relatively few episodes were characterised by elaborate learner engagement, compared to PE. It seems that when learners produce little metatalk or few other justifications for responses given, teachers compensate for this by adding it themselves, possibly in an attempt to add greater academic validity to the task, or, perhaps, to reinforce their status as linguistic "expert". Interviews with teachers could shed more light on this.

5.3.3 Differences in Elaborate Engagement less Significant in WC.
Differences in engagement between modes were less significant in written composition, and most LREs in WC demonstrated only limited engagement, whatever the mode. This one-to-one exchange between Olimpia and her teacher illustrates a typical limited engagement WC LRE, in which Olimpia questioned the meaning of the word "outright", and the teacher provided a synonym:

Teacher	Yeah, about smoking in public places and also smoking at home, what do you think, do you think we should ban this outright…
Olimpia	Right?
Teacher	Outright ban, like your complete ban, should, do you think we should ban this completely, what do you
Olimpia	Ah OK no, while in the, in the, in the home

The lower elaborate engagement figure in WC may suggest that while the meaning-focussed composition task not only elicited fewer LREs in total than the language-focussed passage editing – which coincides with findings from Storch 1998 and 2013 – LREs in the meaning-focussed tasked also appeared to demonstrate less elaborate engagement. The task design in passage editing, conversely, not only seems to force learners to language, but also appears more conducive to bringing about behaviours that constitute elaborate engagement, such as proposing and choosing options and justifying decisions.

To summarise the findings regarding learner engagement, elaborate engagement was most prominent in the individual mode, although this is likely a result of there being no possibility of elaborate + limited engagement for individuals. Elaborate + limited engagement occurred to a similar extent in both group and one-to-one modes, and indicates that elaborate engagement in both participants is

unnecessary for forms to be languaged and LREs resolved. Proportionally fewer limited engagement episodes were observed in one-to-one, which may be related to teachers adding engagement to episodes that would otherwise have remained limited. Furthermore, the form-focussed PE task appears more closely associated with elaborate engagement than the meaning-focussed written composition, possibly because it is conducive to justifying decisions through metalanguage, and to generating and evaluating linguistic options.

The analysis now turns its attention to Research Question 3, regarding learning and development.

5.4 Research Question 3: How does Learning of the Forms Topicalised in LREs, in Terms of Microgenetic Development and Post-test Performance, Vary between the Three Delivery Modes?

The present study set about identifying learning and development associated with LREs in two ways. Firstly, it observed microgenetic development (MGD) within LREs in both tasks, that is, the observable restructuring of one or both of the participants' language knowledge within the short duration of an LRE, or series of LREs within the task. This restructuring was made visible by some indication of uptake within the protocol itself, beyond a phatic response such as "Oh", in the form of a more extended response, or further use of the item. These instances of MGD are discussed in section 5.4.1, below.

Secondly, learning in the sense of longer-term receptive awareness of forms topicalised in LREs in PE was observed in the post-test, in which learners edited an isomorphic text containing the same number of the same kinds of errors as the first PE task. These results are discussed in section 5.4.2, below.

5.4.1　Microgenetic Development

5.4.1.1 Significantly more MGD in one-to-one.

Table 20
Instances of microgenetic development observed in group, one-to-one and individual modes

		Instances of MGD	M	SD
Passage Editing	Group (n = 15)	16	1.1	1.2
	One-to-one (n = 15)	40	2.7	2.1
	Individual (n = 15)	1	0.1	0.3
Written Composition	Group (n = 15)	3	0.2	0.4
	One-to-one (n = 15)	16	1.1	1.5
	Individual (n = 15)	0	0.0	0.0

In PE, there were significantly more instances of MGD in one-to-one (40 in total) than individual (just one instance observed across the 15 participants and two tasks). While the difference between one-to-one and group (16 instances) did not quite reach significance, it still seems that MGD is more closely related to one-to-one interaction than learner-learner interaction in groups or, in particular, individual task responses.

The qualitative analysis revealed that MGD in one-to-one interaction was often observed in learner uptake following a correction by the teacher. In the following extract from Olsen's PE task, the teacher corrected Olsen's use of "budget" by suggesting the alternative "quote" and explaining the difference in meaning. Olsen accepted this correction by saying "that's a quote" – which in itself did not constitute MGD – and confirmed that this word was new for him. The evidence of MGD began when he checked the spelling of the new word, which he wished to use, and continued in all subsequent utterances in which he used the new word rather than the originally preferred "budget". He then sought to build upon his semantic understanding of the word by seeking syntactic information regarding the appropriate prepositional collocation, "a quote for" + noun, and was finally able to produce the expression "a quote for the course":

Teacher	Yeah, that… you could say concern like that, concerning this topic comma… can you…
Olsen	Give me a budget… could, could you give me a budget, can I say that, budget?...

Teacher	Ah… like a *presupuesto* [budget or quote]
Olsen	*Presupuesto* [budget or quote], a budget ah, ah about the course, on the course, or
Teacher	That's could you give me a quote… a quote, a budget is like, my amount of money that I have erm
Olsen	For for the money that I can expend OK
Teacher	I have a budget of 5000 euros
Olsen	OK
Teacher	But if I ask a company for, for a document, that's not a budget, it's a quote
Olsen	that's a quote New for me, doesn't ring, er quote, quot-e, Q U O
Teacher	E, exactly
Olsen	OK, so I change, could you give me a, quote
Teacher	Perfect
Olsen	A quote… a quote, a quote on?
Teacher	A quote for
Olsen	For… this is a this things about prepositions is really tricky ah
Teacher	it's difficult… Cos you just have to learn the preposition with the word, it's a collocation
Olsen	Quote, quote of…
Teacher	Quote for
Olsen	Ah, for, sorry sorry sorry
Teacher	for, it's OK
Olsen	For, for the course heh?
Teacher	Yeah…
Olsen	For the course, for the course…

MGD was not always observed within a single LRE, as forms sometimes had to be languaged more than once for development to become evident. In the following extract, for example, Onora and her teacher languaged the structure "looking forward to" + gerund. At the end of this LRE, Onora was able to produce the structure correctly, suggesting MGD had occurred:

Onora	"I'm sure the formation will be brilliant, I'm looking forward", er forward I think you don't use the to, huh? Forward studying in the UK? Or you have to use the to
Teacher	Yeah you have to use the to, this is correct
Onora	OK
Teacher	I'm really looking forward to studying, that's correct
Onora	I thought it was with looking forward you don't have to use the, the
Teacher	Yeah, you need the preposition to
Onora	OK, "UK but apart from the studies… I'm really looking forward to studying…

However, towards the end of the task the same structure re-emerged, and Onora did not produce the correction preposition "to". The form was subsequently re-languaged, after which Onora was able to produce it correctly, which seemed to confirm that MGD had occurred:

Onora	So my best regards and hope and I'm looking forward
Teacher	Fantastic yeah…
Onora	My best regards and also I'm er looking forward… of seeing
Teacher	I'm looking forward to…
Onora	Forward's always to, after
Teacher	Yeah
Onora	OK… to seeing you soon
Teacher	Great
Onora	To seeing you soon
Teacher	Uh hum

A similar example of a form languaged more than once before evidence of MGD was observable occurred in Olimpia's dialogue with her teacher regarding the structure *at home:*

Teacher	OK, this is all really excellent … here do you think proposition is in or at
Olimpìa	In?
Teacher	No
Olimpìa	At @
Teacher	Yes @
Olimpìa	At home OK
Teacher	Yes, in fact it says it up here
Olimpìa	Ah yes, of course @ …

However, on a subsequent instance of the same structure, the teacher used an echo correction technique in order to elicit a self-correction from the learner:

Olimpia	Ah OK no while in the, in the, in the home
Teacher	In the home?...
Olimpia	Sorry, at home @ … at home when, when people are at home

It seems, then, that development was not always linear: it sometimes regressed, and sometimes required further scaffolding in order for the process of internalisation to continue. It is also not evident whether the knowledge constructed was retained in a way that learners could recognise or reproduce at a later date. In the short (microgenetic) term, however, development was evident in these interactions.

Regarding the significantly higher proportion of episodes evidencing MGD in one-to-one, it seems likely that MGD in learner-teacher interactions was more visible than in learner-learner interactions in group mode, because the teacher made it visible by eliciting and checking understanding in ways that students working together did not. MGD occurred in group mode, but was possibly not made visible in the same way. A longitudinal study observing learning gains over time arising from learner-learner interaction may, perhaps, help shed more light on the possible occurrence of MGD not observable in interaction. It also seems possible that by encouraging learners to make the kinds of elicitation and checking moves that teachers make, more MGD may be made visible in student-student interaction.

5.4.1.2 Individual MGD only observed on one occasion. If, as the data suggest, observable MGD is associated with uptake following correction by an expert other such as a teacher, then it is unsurprising that there were almost no instances of observable MGD in the individual mode, as there was no interlocutor. The only instance of MGD in the individual mode occurred in Ibrahim's think-aloud protocol, where he thought through and verbalised a problem relating to prepositions of place. By drawing on his knowledge of the analogous prepositional structure "at + school", he was able to resolve the episode and produce "at + university". The evidence of microgenetic development is in his application of this constructed knowledge to a subsequent problem involving the same form:

Ibrahim: "just writing to say"… "formation in your university"… now I'm not, not sure but I think it's not at, in your university, but language formation at your university, I'm not sure but I think it's at not in, because it's like at school, so at your university… same mistake erm… another time, these languages at, "so it would be really cool to study these languages in your university"… erm, I think… in your university, at your university, no in your university…

Ibrahim's strategy of drawing on existing knowledge in order to help resolve a new problem is an example of self-scaffolding. Like the learners in Chi *et al*'s (1989) study, Ibrahim interrogated himself about what he did not understand, then resolved the episode through self-explanation in a process akin to the interrogation of the epistemic self described by Holton & Clark (2006). Ibrahim self-scaffolded heuristically by making optimal use of available resources (Bickhard 2005), in this case his knowledge of analogous forms.

That there was only one observed example of individual self-scaffolding may suggest that it occurs very little. Another interpretation is that self-scaffolding does occur, but there is a methodological difficulty in observing it. The greater number of one-to-one and learner-learner instances of observed MGD suggests that an interlocutor is necessary for MGD to be observed; in the data it was much more common to see development when one person taught something to another. Self-scaffolding, conversely, in which individual learners, for example, break down problems into smaller parts, draw on existing knowledge, or start with simpler problems before moving onto more complex ones, was not observed in the present study beyond the example above.

5.4.1.3 Group MGD occurred, although to a lesser extent than in one-to-one. While learner-learner instances of MGD in group mode PE amounted to fewer than half the one-to-one instances, they were still significantly greater than individual instances. In the following PE extract, for example, Gema collaborated with Georgina to support Georgina's understanding of the use of past simple in second conditional structures. Georgina raised the question of which form to use, past or present, and Gema confirmed her belief it should be the past. Georgina asked again, seeming unsure whether the information provided by Gema was correct, and Georgina then provided specific support contingent on Georgina's apparent lack of sureness in the form of a metalinguistic explanation. Georgina then appeared to have a 'lightbulb' moment in which she remembered about conditional sentences. Gema continued to provide more support in the form of a further example, ending this by asking a question (although it is open to interpretation whether this question was an attempt to check understanding, the way teachers do, or if Gema was now unsure herself of the correct form to use). Georgina's confirmation of the correct answer in this analogous example was evidence of MGD:

Georgina	Here, he's talking about, er "If I pay a deposit now, how much time shall I have to pay the rest of the money?"… but is pay? Or better in the past, "paid"? Or "if I have to pay a deposit now"… this about money all this thing…
Gema	er… paid, if I paid
Georgina	past?
Gema	Yes…. Is not past in the, er meaning, is past in the form only, is con, conditional…
Georgina	Ah conditional sentences, OK
Gema	Like, "if

| | I give you a buzz on the phone number you put in your email, are there a chance you can tell me more?"… we need past? |
| Georgina | Yes, is similar, if I give, gave, gave you a buzz |

MGD and scaffolding are therefore observed not only between teachers and learners, but also between peers.

5.4.1.4 MGD differences between modes not significant in WC. It is noteworthy that while in PE there were significant differences between modes in the numbers of instances of MGD, in WC these differences did not reach significance. The MGD figures for each mode were much lower overall in WC than in PE – 16 instances in one-to-one, 3 in group and none in individual (although this is also reflective of the lower overall number of episodes in WC). It appears, then, that WC is not only less conducive to languaging than PE, and less conducive to tasks characterised by elaborate engagement, but also less likely to bring about instances of MGD. Again, it appears that a form-focussed task is more likely to encourage participants to language, engage elaborately, and (co)construct knowledge within a microgenetic timespan.

5.4.2 Test Responses. The post-test consisted of a passage editing task, completed individually, that was isomorphic to the original PE task; that is, the test contained 30 errors and inaccuracies of the same type as the original task. It was assumed that if learners had languaged a form in the task, and were then able to correct the same form in the post-test, this could be interpreted as evidence that participants had learned something new, or consolidated existing knowledge from the episode (as there was no pre-test, it was not usually possible to determine if learners already knew the form prior to the task, although there was sometimes qualitative evidence regarding this within the LRE itself). The following section discusses learners' test responses and their implications.

5.4.2.1 Most test items corresponded to LREs.

Table 21
Post-test items that corresponded to LREs in group, one-to-one and individual modes

	Items that corresponded to LREs	As a percentage of LREs	M
Group (n = 30)	614	75.6%	20.5
One-to-one (n = 15)	287	79.9%	19.1
Individual (n = 15)	201	85.5%	13.4

I chose the isomorphic task as a next-best alternative to tailor-made testing, which would have involved a test item created for each LRE observed in the recorded data from the PE task. In this way, the post-test would have ensured that every LRE had a corresponding item. However, it was not logistically possible for me to create, within the timescale of the study, valid and reliable test items relating to all the LREs produced in PE, which would end up totalling 1000. I therefore chose to use the isomorphic task instead, despite the limitation that, since it is not possible to predict which forms learners would language, there would inevitably be LREs with no corresponding test item, and test items with no corresponding LRE.

Despite this limitation, the quantitative analysis demonstrated that the number of test items that corresponded to PE LREs, presented as a percentage of these LREs, was between 76% (for group) and 86% (for individual) – and not significantly different between modes – which suggests that in fact the post-test did manage to gather data relating to most of the LREs produced. Furthermore, very few test items attempted by learners (7% of total items in the case of one-to-one, 10% for individuals and 15% for group learners) related to forms not languaged in the task, which again may be interpreted as evidence that, on the whole, test items related to forms topicalised in learner talk during the task.

5.4.2.2 Group learners attempted significantly fewer test items relating to their LREs than individual or one-to-one learners.

Table 22
Post-test items attempted in group, one-to-one and individual modes

	Items that corresponded to LREs	Items attempted	Items attempted as a percentage of items that corresponded to LREs	Mean per participant
Group (n = 30)	614	249	40.6%	8.3
One-to-one (n = 15)	287	160	55.7%	10.7
Individual (n = 15)	201	103	51.2%	6.9

The open-ended nature of the post-test meant that learners could attempt as few or as many corrections as they wished. Learners across the modes generally only attempted around half of the test items that corresponded to their LREs. This may have been a result of the lack of salience of test items, that is, "how easy it is to … perceive a given structure" (Goldschneider & DeKeyser 2001: 22). Learners may simply not have seen the forms that needed correcting, which were presented without

being made salient in the continuous prose of the email. If these had been presented as discrete items, such as multiple choice test items (as could have been the case with a tailor-made test) then a greater proportion of test items might have been attempted.

That said, a significantly higher proportion of test items relating to LREs was attempted by one-to-one and individual learners, compared to group learners, but there was no significant difference between one-to-one and individual. This finding suggests that participants may have found forms that had been focussed on individually, or with their teacher, more memorable and therefore easier to identify as errors in the post-test than forms focussed on in learner-learner dyads. This observation, which supports Williams (2001), may relate to participants' degree of trust in the knowledgeability of their interlocutor, an issue which was identified in some interview responses regarding the value of pairwork. While many participants spoke of the potential benefits of pairwork, some, such as Georgina, expressed greater trust in input from her teacher rather than from her peers:

Me:	It's interesting here [in the questionnaire] you say … you like working with a partner, you like doing speaking practice, but it's not necessarily important for you to get feedback from other students
Georgina:	Yes because it's the teacher who is the who for example have the right or the true, no? And I think that is more important what teacher say than what other student said, they are native from England, we are not, [Gema] is from Spain, so…
Me:	OK, so you like having speaking practice with a partner, you like learning things from each other, but with correction and feedback you prefer that to come from the teacher
Georgina:	Yes, yes @

If peer talk is in fact less likely to relate to subsequent receptive awareness of forms focussed on than learner-teacher talk or self-talk, this may lend support to Swain's (2013) observation that in peer interaction, not all speech is necessarily social, but may in fact be private, for the self. Often learners appear to be talking "to each other, but are in fact following their own agenda" (Swain 2013: 201). Such an assertion relates to Vygtosky's (1987) concept of private speech, in which inner speech, that is, speech that has become internalised as a tool for the purposes of self-regulation, surfaces in order to aid the speaker in the resolution of cognitively complex tasks. In the peer-peer protocols there were examples of speech that appeared, on the surface, to be socially directed, but may in fact have been vocalised

speech for the self. In the following WC extract, for instance, German vocalised a series of language problems, but resolved these himself. His speech was not, it would seem, socially directed. Guillermina responded to German's output, but these responses did not contribute to collaborative resolution of the LREs. German followed his own agenda and decided on the words to write in order to complete the composition task:

German	Erm, this idea… "there are people that defends the fact of smoking and where there are people who disagree", erm, agree where? Whereas?
Guillermina	*aunque o algo así, no sé como decirlo* [although, or something like that, I don't know how to say it]
German	whereas *mientras que* [whereas]
Guillermina	Ah vale [ah OK]… *con esto* [with this] then
German	OK "where there are people who agree whereas"
Guillermina	Erm we could erm talk er we could say that erm, we
German	We will ana
Guillermina	Yes
German	Analyse
Guillermina	We?
German	We will analyse the advantages and disadvantages
Guillermina	ah OK, or
German	Or OK
Guillermina	Or maybe, like, positionate us in the *en el medio tío* [in the middle, mate] in middle of these two ideas
German	OK

Given the significantly fewer test items attempted following peer-peer LREs, learners may not have always listened not each other's languaging, and LREs initiated and resolved by the same learner may not have always constituted learning opportunities for the interlocutor.

5.4.2.3 Most test items attempted resolved in agreement with LRE resolution.

Table 23 (partially reproduced)

Post-test items corrected in agreement with LRE resolution

	Items attempted	Items corrected in **agreement** with LRE resolution	Items corrected in **agreement,** as a proportion of items attempted	Mean items per participant
Group (n = 30)	249	182	73.1%	6.1
One-to-one (n = 15)	160	124	77.5%	8.3
Individual (n = 15)	103	73	70.9%	4.9

Of the test items attempted by participants, most of these – between 71% and 78%, depending on the mode – were resolved in agreement with the LRE resolution, that is, the correction made on the post-test was the same as the correction proposed during the PE task. This may constitute evidence that there is an association between LREs and learning, with new knowledge constructed (or existing knowledge consolidated) in the LRE surfacing again on the isomorphic task.

In the following extract, for example, Ofelia initiated an LRE regarding the greeting *Hi* and its informality, and with scaffolding from her teacher in the form of prompting and the provision of an L1 equivalent, was able to provide the correction *Dear*:

Ofelia	First this Hi
Teacher	Hm
Ofelia	Is like a bit informal
Teacher	OK, what do you think would be better?...
Ofelia	I really don't know how to make it better but,
Teacher	Hm, if you write a letter or an email, usually, how do you begin?... Is there an expression in English like, a bit like *estimado* [dear]
Ofelia	Ah like, Dear
Teacher	Yeah, exactly, so you could change that for Dear
Ofelia	I wasn't sure if it was too personal or not, I mean
Teacher	Yeah, you can use Dear for, for er… yeah for a formal email, a formal letter, that's fine
Ofelia	OK…

In the post-test, Ofelia corrected "Hi" by writing "Dear". This correction therefore appeared to relate to knowledge constructed in the episode, in which there was evidence that, while Ofelia had previously been aware of the item "Dear", she had not been fully aware of its usage. In this way, it may be interpreted that the test was able to confirm that learning had occurred, and that, in Vygotskian terms, a concept that had previously been spontaneous had moved towards the scientific.

Also of interest were test items resolved in agreement with LRE resolution when the LRE had itself been incorrectly resolved. Georgina and Gema, for example, settled on the incorrect form "Dear Mister" as an alternative to "Hi":

Georgina	OK, well this is formal no?
Gema	Yes is formal because it's a student and he is, er, Andy, he is writing to, to
Georgina	To a university no? So this "Hi"… first, this is not right
Gema	No it is not right, it needs to be much more formal, maybe Esteemed, er,

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Georgina   I think Dear
Gema   OK yes, Dear, Dear Mrs or Dear Mister

Tellingly, both participants then reproduced the incorrect form "Dear Mister" in the post-test.   As in La Pierre's (1994) study, it appeared that participants had retained the incorrect knowledge that had been constructed the previous week. Swain (1998) argues that retention of incorrect knowledge may be a greater indicator of learning associated with languaging than the reproduction of correct knowledge, since learners may have known the correct forms prior to the episode. As noted above, in the absence of a pre-test it is not always possible to determine whether episodes are the site of construction of new knowledge or the consolidation of existing knowledge, and so the presence of learning in an undesired direction is evidence that learning has in fact occurred.

Similarly, individual learner Isabella verbalised two episodes in quick succession, both of which were resolved incorrectly: firstly, she removed the "S" from "Mrs", and then changed the comma after "Hi Mrs Horowitz" to a colon:

Isabella   Yes, well, it seems to me that is very very, too er formal, er informal, this email, to a University is not the right, how to say, I think the right way to say to a person that her, erm Andy, I do not know this person, is very informal I think… grammar… vocabulary… OK, so… "Mrs Horowitz", this is not correct, is without S, Mister, and the comma I think is not correct, it need two points…

Later in the same task, she chose the incorrect "I wait for your reply" as a way to sign off the letter:

Isabella: and "bye for now and see you soon", of course no, in this letter is very informal maybe, please answer me soon, I wait for your er, er, reply, yes….

She then made these same three erroneous "corrections" on the post test. These responses were therefore marked as resolved in agreement with LRE resolution, although the resolutions were themselves incorrect. Again, the test responses may be interpreted as evidence that the LREs had been the site of construction or consolidation of knowledge, albeit erroneous.

No significant differences were found between modes in test items resolved in agreement with LRE resolution, mirroring findings from Nassaji & Tian (2010), who found that although pairs demonstrated greater accuracy than individuals when

completing cloze and text editing tasks seeded with phrasal verbs, there were no significant differences in learning gains. In this study, as in theirs, learning appeared to occur regardless of mode.

5.4.2.4 Few test items attempted resolved in disagreement with LRE resolution.

Table 23 (partially reproduced)

Post-test items corrected in disagreement with LRE resolution

	Items attempted	Items corrected in **disagreement** with LRE resolution	Items corrected in **disagreement,** as a proportion of items attempted	Mean items per participant
Group (n = 30)	249	37	14.9%	1.2
One-to-one (n = 15)	160	20	12.5%	1.3
Individual (n = 15)	103	4	3.9%	0.3

Relatively few test items were resolved in a way that differed from LRE resolution in the task: just 4% of test items attempted in the individual mode, 13% in one-to-one and 15% in group. The difference between modes was not significant. This finding may constitute further evidence that, no matter what the mode, there exists a relationship between decisions made during talk in LREs and subsequent receptive awareness of forms topicalised.

Despite the lack of significant differences between modes, it is noteworthy that the lowest figure for test items resolved in disagreement with LRE resolution was found for individual learners, and the highest corresponded to group learners. As discussed above, even when LREs had been resolved a certain way, group learners may have been silently following their own agenda, and this sometimes only became apparent in the post-test. Grisela, for example, who had completed the PE task with Gualterio, went on to produce a post-test in which over half of the items attempted were corrected in a way that differed from LRE resolutions during the task. In the following excerpt from the task, she participated in an LRE regarding the formality of the adjective "cool", which was resolved by Gualterio, who decided on "great".

Grisela	I'm sure the	course
Gualterio		the course
Grisela	Will be	
Gualterio	Will be… *pero tenemos que utlizar palabras más, más palabras porque* [but we need to use words that are more, more words because]

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Grisela	*Más formal* [more formal]
Gualterio	*Otro vocabulario, un diferente vocabulario, todo es muy simple,* [another vocabulary, a different vocabulary, it's all too simple] *yo pienso* [I think]
Grisela	Will be, will be
Gualterio	Will be great, I'm sure, the course will be great, "I'm really looking forward"
Grisela	"Really looking forward"

In the post-test, Grisela corrected the word "cool", but instead of "great" wrote "good". This suggests she may in fact have preferred "good" during the task, but was happy to let Gualterio decide on "great". Similarly, Gualterio resolved the following episode by suggesting possibilities for ending a formal email appropriately. While Grisela appeared to agree, in the post-test she chose a different ending completely, "kind regards".

Gualterio	OK so I can't say about such activities, activities… "bye for now and see you soon", bye for now is very like, say you like er… I'm looking forward to hear from you… or thank you very much, yes I'm looking forward, thank, you… in advanced
Grisela	Yes
Gualterio	In advanced, thank you in advanced
Grisela	in advanced

The view that Grisela did not necessarily agree with resolutions in the task is supported by her questionnaire responses, in which she rated the opportunity for peer-feedback offered by group classes as a "not very important" reason for choosing them, and also her interview data:

Me:	You say that feedback from the other students, this is not an important reason for choosing, for you to choose group classes…
Grisela:	The feedback, no is not so important when this is feedback of the, the students, the other students… is more important the feedback of the teacher, I think
Me:	But you say you like to do tasks in pairs…
Grisela	Yes, I like it, I like to practise the speaking, but is not to learn something from the, from my partner, is only to practise, practise the speaking

The pedagogical implication of such views on peer interaction is that learners could usefully be taught how to provide feedback to their peers. Teachers can provide guidance, for example, on how learners might suggest alternative language forms or ask the kinds of questions that invite their partner to consider more accurate, appropriate or sophisticated forms.

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5.4.2.5 Very few tests items resolved when there had been no LRE resolution, or no corresponding LRE.

Table 23 (partially reproduced)

	Items attempted	Items corrected when there had been **no resolution**	Items corrected when there had been **no resolution,** as a proportion of items attempted	Mean items per participant
Group (n = 30)	249	11	4.4%	0.4
One-to-one (n = 15)	160	0	0.0%	0.0
Individual (n = 15)	103	10	9.7%	0.7

Table 24
Post-test items attempted relating to forms not languaged in group, one-to-one and individual modes

	Items attempted relating to forms not languaged in the task	Mean per participant
Group (n = 30)	138	4.6
One-to-one (n = 15)	32	2.1
Individual (n = 15)	46	3.1

There were very few instances of test items resolved when the corresponding LRE had been left unresolved: just 4% of items attempted in group mode, 10% in individual and 0% in one-to-one (this latter figure was because almost no LREs were left unresolved in one-to-one). Differences between modes were not significant, but that the highest of these figures corresponds to the individual mode may again point towards a potential limitation of the think-aloud instrument. If learners were able to make corrections on the test, but had not resolved the LREs about these same forms during the task, it may be the case that learners did in fact know the resolution, but did not verbalise it. The pressure of being recorded, and of knowing that this recording would be listened to by a researcher, may have inhibited the verbal resolution of episodes. In the post-test, conversely, without that pressure, learners were capable of correcting the forms. Interview data from India suggests this may have been true in her case:

> Me: How did you feel doing the task?
> India: Well, a little strange, a little nervous because the, the mobile phone was…
> Me: Recording?
> India   Yes @ yes it was recording… so this was not, it was a little bit strange
> Me: OK… how did that make you feel?
> India: Well, it was well, OK… but maybe I do things different, not in the same way like when I am, I am alone… just me and not the mobile phone

Me: Different, how?...

India: I don't know... is just different

Similarly, few test items were resolved when there had been no LRE at all about the form in the task: between 7% (in one-to-one) and 15% (in group) of the total number of items on the test. These items were forms that learners did not language during the task, but, when presented with them again in the test, learners attempted to correct them. This may have occurred because learners may require more than one exposure to forms in order to detect errors (Bygate, Skehan & Swain: 2001). Differences between modes were not significant in this respect, however.

5.4.2.6 No significant differences between modes in test items attempted and resolved only partially.

Table 23 (partially reproduced)

	Items attempted	Items corrected **only partially**	Items corrected **only partially,** as a proportion of items attempted	Mean items per participant
Group (n = 30)	249	17	6.8%	0.6
One-to-one (n = 15)	160	16	10.0%	1.1
Individual (n = 15)	103	16	15.5%	1.1

Test items were coded as partially resolved when the participant indicated that there was an error, usually by circling or underlining it, but did not write an alternative form on the test paper. Such responses accounted for a relatively small proportion of test items attempted (7% for group, 10% for one-to-one and 16% for individual), and differences between modes were not significant. While the evidence of consolidation or construction of knowledge offered by partially resolved items is perhaps less strong than that suggested by test items resolved in agreement with LREs, such responses nevertheless indicated some relationship between LRE and the test item.

In the following one-to-one episode, for example, Onofre identified, with support from his teacher, the inappropriacy of the noun "buzz "in an formal email, and then asked his teacher to confirm the appropriateness of the alternative expression "give you a call":

Onofre	For this "give you a buzz", a buzz is like a telephone call?
Teacher	It is a telephone call, yes, it is…
Onofre	So it's fine?
Teacher	It's fine if you're talking to a friend, but not in an e-mail like this
Onofre	Ah OK so it's very informal?
Teacher	Exactly
Onofre	So maybe we can say, if I give you a call?
Teacher	Yeah, I think that would be much, much better…

Onofre then circled the word "buzz" on his post-test, but did not provide the alternative form "call". This may constitute evidence that the episode had been memorable enough for Onofre to remember the inappropriacy of "buzz", but that the correct form had not yet been internalised. An alternative interpretation, discussed earlier, is that the learner had not fully understood the test rubric, and assumed that identifying the error was sufficient in order to complete the test.

To summarise findings regarding associations between LREs and learning, significantly more microgenetic development was observed in one-to-one interaction. This finding may relate to specific structural characteristics of one-to-one dialogue, in which there tended to be scaffolding, and MGD evidenced by learner uptake of correct forms. MGD was also evident to a lesser extent in group mode, as was peer support. While there was little evidence of self-scaffolding and MGD in the individual mode, the methodological constraints of the think-aloud and the absence of an interlocutor may have meant that these were not observable. Regarding test responses, that a significantly higher proportion of test items relating to LREs was attempted by one-to-one and individual learners suggests that languaging is more strongly associated with subsequent awareness when it occurs individually or with a teacher. Self-directed speech sometimes observed in learner-learner dyads in group mode, in which learners follow their own agenda, lends support to the notion of greater trust in personal or teacher knowledge than in a peer's knowledge. However, in all modes most items attempted were resolved in agreement with LRE resolution, and few were resolved in disagreement, which constitutes evidence of a possible association between LREs and learning. The lack of significant differences between modes in these last two respects may indicate that associations between languaging and learning exist regardless of mode.

The remainder of this thesis discusses the key implications, conclusions and directions for future research.

CHAPTER VI: DISCUSSION AND CONCLUSIONS

6.1   Introduction

This final chapter will answer Research Question 4 by highlighting the broader theoretical, methodological and pedagogical implications of findings from the present study regarding EFL course delivery mode and language learning. It will also consider potential limitations and outline some possible directions for future research, before summing up the key findings.

6.2   Theoretical Implications

The findings suggest a number of theoretical considerations. Firstly, evidence is provided that learners were able to "talk about the language they are producing, question their language use, or other- or self-correct" (Swain 1998: 70); that is, they languaged in all three modes. Furthermore, episodes contained many instances of scaffolding (Wood *et al* 1976), both heuristic (Holton & Clarke 2006) or cooperative (Bickhard 1992), and conceptual (Holton & Clarke 2006) or informational (Bickhard 1992). Scaffolding not only occurred in one-to-one interaction, where teachers mediated learners' development (Vygotsky 1978) but also in learner-learner interaction in group mode, where peer scaffolding (Donato 1994; Ohta 2000, 2001, Storch 2002, 2005) was sometimes observed, and where numbers of LREs did not significantly differ from one-to-one. The present study therefore contributes to the body of literature that supports languaging and scaffolding as theoretical constructs, and Vygotskian social constructivism as a framework for learning.

Given that numbers of LREs, proportions of correctly resolved LREs and instances of microgenetic development were significantly lower in the individual mode, it seems that the presence of an interlocutor may be conducive to languaging, LRE resolution and learning – or at least, to making these concepts visible to an observer. While there was little evidence in the individual mode of self-scaffolding (Holton & Clark 2006; Knouzi *et al* 2009), this result should be considered within the context of the potential limitations of think-aloud protocols as a data collection instrument (see 6.3.1, below).

That LREs appeared to be higher quality in one-to-one interaction – in terms of correct resolution, the identity of the resolver (usually the learner) and instances of

microgenetic development – lends support to the role of the expert other in Vygotskian sociocultural theory. The guidance provided by the expert teacher aided learners as they moved from their current level of independent problem solving towards their potential level within their Zone of Proximal Development. Through languaging and the resolution of episodes, forms became internalised, that is, they moved from spontaneous to scientific concepts, and this internalisation was evident both at a microgenetic level within tasks, and also in test responses.

6.3   Methodological Implications and Potential Limitations.

The present study was subject to a number of methodological constraints that mean that its findings need to be interpreted with a degree of caution. Naturally, there is limited generalisability to the parent population of language learners in general when only 60 learners in a specific adult, L1-Spanish EFL context were observed. It must also be borne in mind that the study observed only two of the many task types normally employed in the three modes. However, perhaps the most important methodological limitations relate to the use of the think-aloud protocol, the post-test, and the narrow focus on two specific tasks, which will be discussed in more detail in this section.

6.3.1   The Think-Aloud Protocol.   That significantly fewer LREs were produced in the individual mode may constitute evidence that the think–aloud methodology affected learners' output. It is possible that the act of verbalising was reactive (Ellis 2001; Jourdenais 2001) to the task at hand, and affected task completion. As in any study employing a think-aloud protocol as a data collection instrument, there is a risk that participants may not have verbalised everything they were thinking. Such non-verbalisation may be the result of anxiety, or to safe face, or because participants do not have the L2 resources to express what they are thinking. There is some evidence in the protocols themselves that not every thought was being said, such as this instance in Illanca's think-aloud, produced while completing her written composition:

> Illanca: "OK let me think… yes this is OK"

While Illanca employed the focus features "OK" and "let me think" (Lantolf 2006: 75) to regulate her thinking, it seems highly likely that there were other

thoughts, unspoken, in the pause between "think" and "yes". And without the verbalisation of those thoughts, it is impossible to know the degree to which they constituted languaging, or elaborate or limited engagement. Furthermore, given the Vygotskian position that language completes thought, the thoughts that were verbalised may have been changed by the act of verbalisation. The same could be said, however, for participants in dyadic interaction – there is no way to know that participants were verbalising everything they were thinking, and there is evidence in the discussion (regarding test responses in disagreement with LREs) that learners may in fact have been following their own silent private agendas during dyadic interaction. Ultimately, until such time as technologies such as MRI reach a point at which they can detect participants' thoughts, think-aloud protocols remain one of the few ways to attempt to approximate these, despite the limitations.

6.3.2   The Post-test. It is worth reiterating that the isomorphic post-test was chosen as a next-best option for attempting to measure learning. As discussed in Chapter III: Methodology, tailor-made post-tests items may have been a more effective way to examine learning relating to each LRE in the data, as they would have related to every single LRE. The difficulties inherent in developing so many items in such a short space of time, however, made this option impractical.

That the post-test was isomorphic – containing the same number of the same sorts of errors – meant, by definition, that it was very similar to the task. One possible consequence of this similarity may have been that the test was subject to the effects of task repetition: repeated exposure to the same or very similar tasks may improve learners' accuracy with forms contained within (Gass, Mackey, Alvarez-Torres & Fernández-García 1999; Hawkes 2011). That said, there are arguments that in order for task repetition to positively affect accuracy, two conditions absent in the present study would be required: firstly, feedback would be needed after the first exposure (Sheppard 2006); and secondly, the task would require several repetitions (Bygate *et al* 2001).

The potential impact of task repetition is complicated somewhat by the design of the isomorphic task. Some of the errors, specifically the informal expressions such as "cool" and "see you soon", were simply repeated in the post-test, whereas other

errors took different forms in the post-test. The task, for example, contained a single / double consonant spelling error in "aproximate", while the corresponding consonant spelling error in the test was "acredit". It seems likely that learners will have found the errors repeated verbatim easier to recognise and correct than the errors that were presented differently.

Another limitation of the post-test is the issue of lack of salience of forms, which may have made these difficult to identify as errors (Schmidt & Frota 1986; Schmidt 1990). As errors were not highlighted in any way, learners may not have seen the forms that needed correcting – an issue that would have been avoided if test items had taken, for example, the form of multiple choice test items.

Furthermore, as noted by Chi *et al* (1989), performance on isomorphic items provides no guarantee that learners can extend the application of resolution to non-isomorphic problems, and so results from the post-test may not indicate receptive or productive ability in other contexts. It should also be borne in mind that the current study only observed languaging and learning in two specific task types. A longer-term study that attempted to gather data on different tasks, and subsequent spontaneous receptive recognition and productive use of forms, could overcome the difficulty inherent in a one-shot test treatment which, while easier to implement and control in a quasi-experimental approach than a longitudinal approach, inevitably holds less theoretical and pedagogical validity (Storch 2010b).

Despite the limitations of the test instrument, it is worth highlighting that it was only one of two instruments employed to attempt to measure learning and development: the other was the microgenetic analysis of the data. Triangulating these two data sets, it is possible to find patterns that are similar in both, and these patterns support the argument that the post-test may in fact have captured certain associations between LREs and learning.

Firstly, the one-to-one mode was the site of most observed instances of microgenetic development; it was also the mode with:

i) the highest proportion of items attempted on the post-test;
ii) the highest proportion of items resolved in agreement with LRE resolution;

iii) the lowest proportion of non-LRE items attempted.

Similarly, the individual mode was the site of fewest episodes characterised by microgenetic development, and also

i) the lowest proportion of test items resolved in agreement with LRE resolution;

ii) the highest proportion of items resolved when there had been no LRE resolution;

iii) the highest proportion of items resolved only partially.

While differences between modes did not always reach significance, the similar trends in both MGD and test responses suggest that both may have captured the same learning trends in each mode.

6.3.3   Tasks and interaction as representative of classrooms. The quasi-experimental design of the present study necessitated a narrow observational focus within each mode, in order for comparisons to be drawn between them. For this reason, observation of the group and one-to-one modes focussed only on dyadic interaction. The reality, of course, is that group classes also offer the potential for small group and individual work, and opportunities for the teacher to participate in interaction while monitoring, acting as a resource and a facilitator when questions and difficulties arise. One-to-one classes, on the other hand, also involve individual work, in which the teacher takes a step back in order for learners to work alone and attempt to figure out problems for themselves, or in consultation with resources such as the internet or a dictionary, in the way that individual online learners might work.

Furthermore, only two of the many tasks types commonly found in communicative classrooms were employed in the present study. Passage editing and written composition were chosen partly because they are tasks that can be completed either in pairs or individually, whereas in group or one-to-one classes there are other tasks of a more communicative nature, such as information gap activities, in which the gap in each learner's information drives a genuine need to engage in interaction. The need to find a point of comparison between modes in the present study, however,

meant that such communicative tasks could not be employed, as they cannot be completed alone by online individual learners.

The narrow quasi-experimental focus on the language produced in the two tasks also means that a great deal of contextual and social data, beyond the limited background data collected in the questionnaires and interviews in the present study, was not collected. How much of this broader perspective of the complex classroom is lost when there is a narrow observational focus within a quasi-experimental design? What, for example, is the quality of the relationships between peers, and between teachers and students, in group classes? What is the quality of rapport between tutors and learners in one-to-one classes? How do these social relationships influence languaging and learning? What are the tasks that typically correspond to each mode, how do they differ between modes, and how effectively to they contribute to learning? The wider question here, it seems, is one of how much needs to be observed in a study in order for it to be considered truly classroom-based – that is, providing a holistic view of interaction and learning – rather than just classroom-informed, as is the case in the present quasi-experimental study.

6.4   Pedagogical Implications

6.4.1   Opportunities for Languaging are Opportunities for Learning.
Given the associations that appear to exist between languaging and learning, it seems important that in all three modes learners should be provided with opportunities to participate in tasks that focus on form, and that provide opportunities to talk about the language they are producing, and to self- or other-correct: that is, to language. To a greater extent than a meaning-focussed task such as written composition, a task that focuses on form such as passage editing appears to encourage languaging and elaborate engagement, and is associated with microgenetic development.

6.4.2 Gap-creating by Teachers Benefits Learning, so Could Learners be Encouraged to Create Gaps too? While learner-learner episodes in group mode were resolved more or less evenly by the two participants, one-to-one episodes were characterised by significantly more resolution by the learner, rather than the teacher. Such resolutions often followed carefully structured support – scaffolding – in the form of elicitations and prompts, contingent on the learners' current knowledge as perceived by the teacher as the expert other. In other words, teachers often created

gaps for learners to notice, and to attempt to resolve. The higher number of instances of microgenetic development observed in one-to-one co-occurs with this Socratic (Chi *et al* 2001) approach of guiding learners towards their own resolutions, rather than teachers resolving episodes themselves. This suggests that an inductive guided discovery approach is beneficial for learning.

If group learners could be encouraged to create gaps for their peers, and take responsibility for others' learning as well as their own, then group classrooms may be better able to better approximate one-to-one outcomes. This would also have a beneficial impact on learners' perception of the value of peer feedback and the group learning experience, which interview data indicated was not always positive. What such a pedagogy might look like could be the focus of future research. It is unrealistic, of course, to expect learners to provide peers with the same kind of input that teachers provide: peer language is often characterised by inconsistencies, interlanguage and a reduced ability to reformulate forms (Philp *et al* 2014), so peers cannot be reasonably expected to identify errors and elicit corrections. However, since peer interaction provides a safe space to experiment with language, it seems reasonable to suggest that learners be provided with guidance regarding how they might ask the kinds of questions and make elicitation moves that invite their partner to consider more accurate, appropriate or sophisticated forms. Peers may challenge one another's pre-existing conceptions about language – not necessarily by attempting to correct, but by asking questions that invite reflection. Given Chi *et al*'s (2001) findings that learning in teacher-student dialogue may occur just as effectively regardless of whether tutors assume a traditional didactic role, for example by providing explanations and feedback, or a more interactive role, by prompting using questions such as "what's going on here" and "what do you think" – then these sorts of questions can be encouraged in student-student interaction. Such questions would also increase the level of elaborate engagement in episodes, which in the present study was shown to be significantly lower in peer-peer interaction. It would be interesting to observe if in such a pedagogy there is greater visibility of MGD than in group mode interaction in the present research.

6.4.3 Monitoring and Feedback by Group Teachers Matter. That significantly fewer LREs were correctly resolved in group than in one-to-one underlines the importance of teacher monitoring and feedback during pair-work in

group classes. In the present study, learners did not have access to teacher support during the tasks, but in group classes they usually do, with teachers acting as a resource to support learning by providing information at the time learners need it – that is, when they have reached the limit of their own resources (Philp *et al* 2014). With teacher support, many of the group episodes that were unresolved, incorrectly resolved or partially resolved by learners in dyads may have found a correct resolution, as they invariably did in one-to-one. Teachers also tend to "add" elaborate engagement episodes by asking metalinguistic questions, which encourage learners to think about the forms they produce more deeply.

6.4.4 Online Learners Could Usefully Seek out an Interlocutor. Given the significantly lower numbers of LREs, proportions of correctly resolved LREs and instances of MGD observed in the individual mode, the presence of an interlocutor appears to be associated with languaging, LRE resolution and learning. That the quality of interaction and learning, in terms of resolution of LREs and subsequent awareness of forms topicalised, appears better with a teacher than with another learner indicates online learners could benefit from blending their course with periodic tutorials with a teacher (for example by Skype, if distance is an issue). Given the evidence (US Department of Education, 2009) that online learning containing CMC has the potential to be even more beneficial than FTF learning, then the approach of blending online content with SCMC could lead to positive learning outcomes. If financial constraints make it difficult to obtain tutorial support, seeking out other online learners of English with whom to interact could be another option, as languaging and learning have been demonstrated here to also occur in student-student dyads. Such interaction could usefully be task-oriented – completing a communicative task together, with opportunities to focus on form and, therefore, to language – rather than simply chatting to other learners informally. Practice with an interlocutor not only favours languaging and learning, but would help improve online learners' pronunciation and speaking skills.

6.4.5 Delivery Mode has Implications for Materials Design and Administration. Differences between modes were less noticeable in written composition than in passage editing: several differences between modes that were significant in PE, such as the proportion of grammar LREs or proportion of episodes characterised by elaborate engagement, were not significant in WC. This suggests

that written composition, and possibly meaning-focussed tasks more generally, are tasks that learners could be asked to perform alone, no matter which mode they are working in, and benefit to a similar extent. Form-focussed tasks such as PE, conversely, may be more beneficially performed in student-student or student-teacher dyads, where languaging and learning benefit from there being two heads rather than one, and where a learner or the teacher may raise questions about forms that the interlocutor may not have noticed.

The lack of focus on grammar by individual learners also suggests that online learning materials may need to be supplemented, for example through the use of structured guided discovery tasks and / or more explicit prompts in task rubrics, in order for individuals to focus on important grammar areas to a similar extent to their face-to-face counterparts.

6.4.6   Mode Choice may be Unrelated to Reasons for Learning English, but is Associated with Practical Learner Circumstances.

Questionnaire responses indicated no significant differences between participants regarding their reasons for learning English. It did not therefore appear that any one mode was associated with any particular motivation for learning. The most commonly cited reason for learning was to improve work opportunities, followed by attainment of a certain level of English for participants' current job or school / university. This indicates that regardless of their reasons for learning, all EFL learners can be encouraged to weigh up the pros and cons of each mode in order to choose which to follow.

Differences between modes became apparent, however, regarding reasons for current mode choice. The finding that proximity to the school was an important consideration for group learners, and that being far from the school was an important consideration for online learners, indicates that learners have very practical, logistical reasons for mode choice. Furthermore, almost all learners said they were happy in their current mode and would not prefer to be in another. While it is possible there may be an element of confirmation bias, that is, "the idea that people tend to hang on to their favored hypotheses with unwarranted tenacity and confidence" (Klayman 1995: 385), these responses lend support to the idea that learners have practical reasons for choosing their mode, and are happy to continue in that mode. It seems important to recognise that all three delivery modes are valuable for different reasons,

and to consider how each may be optimized, as suggested above, in terms of learning outcomes.

6.5   Directions for Future Research

A number of directions for future research can be proposed:

- **Analysis of social and behavioural engagement.** Given the current interest in engagement in our field and recent findings (Svalberg 2009, 2012; Philp & Duchesne 2016; Lambert *et al* 2017) indicating that the social and behavioural dimensions of engagement may be interdependent with cognitive engagement, the data in the present study could be re-analysed to identify social and behavioural engagement, and an attempt made to examine relationships between these and learning.

- **Teacher interviews.** These could shed more light on some of the behaviours observed in one-to-one languaging: could teachers, for example, comment on the tendency to "add" engagement to episodes that would otherwise have been limited? Does this occur in order to increase the "academic validity" of the task? It would also be pertinent to explore, given the significantly higher number of spelling LREs and frequent instances of IRE sequences in which teachers elicited corrections in the written composition, the extent to which teachers feel that part of their role is to review and correct learners' writing.

- **The potential relationship between learning environment and LRE focus.** Do individual online learners focus less on grammar when they study alone, and more on skills, as suggested by these results? Possible associations between habitual learning environments and languaging have not yet been explored.

- **Codeswitching and languaging.** Given the many instances of codeswitching, in all modes, it would be of interest to investigate CS functions, and also learners' attitudes to switching. Did, for example, learners assume that tasks should be done only, or predominantly, in L2? If so, was this an inhibiting factor for languaging? Did L1 fulfil a mediating role, as suggested by Philp *et al* (2014), helping learners establish understanding and support each other in their attempts to co-construct talk? A quasi-experimental approach comparing learners instructed to perform tasks and language in L2 only, on the one hand, with learners allowed to use L1, on the other, could shed light on this.

- **The comparative effects of screen and paper on proofreading accuracy.** Given evidence from outside Applied Linguistics (e.g. Wharton Michael 2008) that the medium through which text is presented is associated with proofreading accuracy, together with the significantly lower proportion of episodes focussing on spelling errors in the individual mode in the present study, a comparative study of the two media in language learning would make for interesting research.

- **Interaction and MGD in peer-tutoring.** If learners make the moves teachers make, does MGD become more visible? Given the likelihood that MGD in learner-teacher interaction was more visible than in learner-learner interactions because the teacher made it visible by eliciting and checking understanding, it would be interesting to encourage learners to make these kinds of moves, and observe their MGD. Post-tests, or the ongoing observation of learners and their subsequent use of topicalised forms, could indicate if greater visibility is in fact an indication of greater development.

6.6 Conclusion

The present study set out to investigate the effects of delivery mode in adult EFL courses by comparing languaging and learning between modes. In order to draw comparisons between modes within the quasi-experimental design, the study zoomed in on interaction that was typically representative of each mode: individual work in online courses, learner-teacher talk in one-to-one private tutoring sessions, and dyadic learner-learner interaction in face-to-face groups. Drawing on Vygotskian Sociocultural Theory and Swain's concept of languaging, the analysis of dyadic interaction and individual think-alouds revealed the presence of LREs in all three modes. While individuals produced significantly fewer LREs than dyads in one-to-one and group modes, individual numbers were similar to LREs initiated by each learner in group dyads, suggesting individuals identified language problems with a similar frequency to their group counterparts.

Learner-learner dyads in group mode and one-to-one dyads produced similar numbers of LREs, but one-to-one episodes were more closely associated with learning than group or individual LREs, in terms of both observable instances of microgenetic development and post-test responses. One-to-one episodes were better quality in terms of correctness of resolution and greater resolution by the learner, rather than the

teacher. In one-to-one, resolutions often followed scaffolding in the form of elicitations and prompts contingent on learners' tentative responses and teachers' perceptions of learners' current knowledge. Such teacher guidance towards learner resolution may have made outcomes more memorable for subsequent post-test recall and use. A pedagogical implication is for teachers to provide group learners with guidance regarding the kinds of questions learners can ask to create gaps for others, for example by encouraging peers to consider more accurate, appropriate or sophisticated forms. In this way, group classrooms may be better able to better approximate one-to-one outcomes.

Regarding LRE focus, dyads produced more grammar LREs than individuals, which may relate to habitual grammar-focussed learning practices of face-to-face classrooms, whereas one-to-one dyads focussed more on spelling, suggesting teachers sensed their role was to correct learners' writing. Regarding LRE resolution, proportions of correctly resolved episodes were similar between group and individual modes, although the individual proportion was based on fewer LREs, suggesting individual learners did not initiate episodes they would be unable to resolve. The extent to which LREs were characterised by limited engagement did not differ significantly between modes. In peer-peer interaction in group mode, the prominence of LREs characterised by limited engagement in one learner and elaborate engagement in the other suggested it was unnecessary for both participants to be elaborately engaged for episodes to be languaged and resolved.

Post-test scores across modes of 70% to 80% of items resolved in agreement with LRE resolution in the task suggest associations between languaging and learning. That group learners attempted significantly fewer test items relating to their LREs than individuals or one-to-one learners indicated that forms languaged individually or with a tutor may have been more memorable. This finding, together with the higher number of instances of microgenetic development in one-to-one passage editing, again suggests that group learners could be encouraged to make the kinds of moves that teachers make, in order to improve the memorability of episodes and the likelihood of their becoming opportunities for learning.

The starting point for this research, described in the introductory chapter of the present thesis, was my desire to better understand learning processes in the three

delivery modes offered in the school I teach at, in order to be able to advise learners regarding the amount of learning that might occur in each mode, to challenge preconceptions about modes, and to inform programme design. While many differences exist between modes and may influence the amount learning that can occur, the present quasi-experimental comparative study zoomed in on pairwork, teacher-learner talk and individual task completion as typically representative of tasks in group, one-to-one and online modes, respectively. Given the evidence from this comparison, if a learner is free from financial, geographical or practical constraints when choosing a delivery mode, the best advice would appear to be to choose one-to-one tuition: more learning and development is likely to occur than in pairwork, and teachers – assuming they have received solid training and are willing to employ a communicative, inductive approach in which they encourage learners to take the lead in tasks – will push learners to become more autonomous by scaffolding their learning in a way that transfers responsibility and ability from teacher to learner.

However, the reality – evidenced in learners' questionnaire and interview responses – is that most learners are not free from financial, geographical or practical constraints, and delivery mode is more or less determined by circumstances rather than a matter of choice. The question to answer, then, is not which mode is "best", but how each mode can build on its existing benefits to become even better.

Learners choosing group classes already enjoy several advantages: not only do group classes cost less than one-to-one tuition, but evidence from the present study indicates that the amount of languaging that occurs in pairwork is as much as that of private tuition. Furthermore, elaborate engagement in tasks is more or less comparable to that occurring in one-to-one. These are good reasons to advocate group classes in general, and pairwork in particular. While the amount of scaffolding, microgenetic development and learning may not be equivalent to that of one-to-one, teachers can help address this imbalance by encouraging group learners to assume the roles of questioning, eliciting, gap-seeking peers, who encourage their classmates to question, reflect on and improve their language in a pedagogy characterised by learners taking mutual responsibility for each other's learning.

While individual online learners may not engage in as much visible languaging as their one-to-one and group counterparts, the languaging they do produce is

generally characterised by elaborate engagement and is as effective a learning opportunity, in terms of memorability for posterior recall, as languaging that occurs in one-to-one classes. By encouraging individual learners to seek out opportunities for peer practice, to take a more questioning role of their language production and to scaffold their own development by fully considering the range of linguistic resources available to them – thus widening their range of action and engaging with tasks in a more agentic way (Reeve 2012) – teachers and course developers can help individual online learners improve the amount of languaging in which they engage and, potentially, learning outcomes.

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Appendix 1: First Pilot Passage Editing Task

Read this email from a customer to a holiday apartment rental agency, and correct any problems you find with:

1) **the grammar and vocabulary, and**
2) **the style (formal/informal) of the email**

Hi Mrs Horowitz,

Just writing to say thanks a MILLION for your email about accommodation at your holiday apartments!

I got your brochure – which is really cool – so I now just want to catch a moment to confirm a booking for me and two friends. As I think I used to say in my last email, we'll getting in on the evening of Sunday, 11th November – but I'll give you a buzz before then to confirm the exact time we'll be turning out at the apartment. It can be quite late.

Which reminds me, you said that you can only take bookings from Saturday to Saturday? The thing is, it's innecessary for us to have the apartment on Saturday 10th, as we'll be arrived on the 11th, so any chance you could not charge for that night? It would be BRILLIANT if we won't have to pay! And just to avoid any disunderstandings, can you also just tell me what time we need to be out of the apartment on Sunday 18th? When we go on holiday we used to having a late check-out – is that OK with you?

Anyway, thanks again for everything. I might definitely put 400 pounds into your account as a deposit in the next few days.

Loads of love and see you soon!

Andy xxx

P.S. Any recommendations for cool places for us to go about at night-time? We really want to make advantage of our time there.

Appendix 2: Revised Passage Editing Task

Read this email from a student to a University in the UK, and correct any problems / errors.

Remember to consider the full range of possible errors.   These may include:

- **Grammar**
- **Vocabulary**
- **Spelling**
- **Punctuation**
- **Style (formal / informal)**

Hi Mrs Horowitz,

Just writing to say thanks a MILLION for your email about language formation in your university. The language learning is really important for students here in spain, not just English but other languages too, at my country it is imposible to find good courses in Chinese or the Russian, although it depends of the place, so it'll be really cool to study these languages in your university. Which reminds me, can you give me an aproximate cost of the courses? If I would come to study with you, how much would I need to pay in total? If I pay a deposit now, how much time shall I have to pay the rest of the money? I'm sure the formation will be BRILLIANT, I'm really looking forward to studying in the uk, but apart from the studies, time for making leisure activities is also a priority for me. There were something in your email about what students can do in their free time at the weekends – if I give you a buzz on the phone number you put in your email, are there a chance you can tell me more?

Bye for now and see you soon!

Andy

P.S. Any recommendations for good places on the city to visit at night-time? We really want to take full advantage of our time in England!

Appendix 3: Exit Questionnaire

Section 1: About you

Name: _____ Age: ☐ 18-21 ☐ 22-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60 or over

Do you identify yourself as: male? ☐ female? ☐

In which country did you receive your education? _____

Profession: _____

Section 2: About your English studies

Number of years studying English: _____ Where did you learn English? _____

Main reason(s) for studying English (tick one or more):

    ☐ for enjoyment   ☐ for tourism   ☐ to improve work opportunities

    ☐ it's a requirement for my current job   ☐ it's a requirement for my school or university

    ☐ other (please specify: _____)

Current study mode (tick one):

    ☐ face-to-face group class   ☐ face-to-face one-to-one class   ☐ online self-study

Which kinds of English course have you done in the past? (tick one or more):

    ☐ face-to-face group classes ☐ face-to-face one-to-one classes   ☐ online self-study

    ☐ other (please specify: _____)

Section 3: About your reasons for choosing this course

Please tell us why you chose to study your current course mode. Rate each reason from 1 (not an important reason) to 4 (a very important reason) by putting ticks in the appropriate boxes:

		1	2	3	4
If you chose to study in a face-to-face group class:					
1	I like doing tasks in pairs or groups.				
2	I feel more comfortable in a big class than in a private class.				
3	I can get lots of speaking practice talking to other students.				
4	I want to learn general English, not a specific kind of English.				
5	I can get feedback (for example correction) from other students in the class.				
6	Group classes are better value for money.				
7	The location of the school makes it easy for me to get there.				
8	I like the routine of having fixed days and class times.				
	Other (please specify):				
If you chose to study in a face-to-face one-to-one class:					
1	I like doing tasks just with my teacher, without other students.				
2	I feel more comfortable in a private class than in a big class.				
3	I can get lots of speaking practice talking to my teacher.				
4	I want to learn a specific kind of English, not general English.				
5	I can get personalised feedback (for example correction) from my teacher.				
6	One-to-one classes are better value for money.				
7	The location of the school makes it easy for me to get there.				
8	I like the routine of having fixed days and class times.				
	Other (please specify):				
If you chose to study in an online self-study course:					
1	I like doing tasks alone.				
2	I feel more comfortable studying alone than studying with other people.				
3	I want to focus on language, reading, writing and listening, rather than speaking.				
4	I want to learn general English, not a specific kind of English.				
5	I can get personalised correction from the computer.				
6	Online courses are better value for money.				
7	Because of distance/location, I cannot make it to the school.				
8	I like the flexibility of being able to study whenever I want.				
	Other (please specify):				

Would you prefer to be studying in a different delivery mode?   ☐ yes   ☐ no

If "yes", which delivery mode would you prefer, and why?

_____

Thanks for your participation.

Appendix 4: Lancaster University Ethics Application

Data Collection Procedures and Instruments

Name of Student

Andrew Sampson

Research title

Language-Related Episodes (LREs) and learning impact compared across three EFL course delivery modes.

Overall aim of the research project

My research aims to investigate the impact of three delivery modes (face-to-face group, face-to-face one-to-one, and online) of English as a Foreign Language (EFL) courses on learner interaction, and the significance for learning. Given the growth in demand for asynchronous online language learning platforms, I wish to examine the learning processes that occur when learners do language tasks alone, compared to when similar tasks are performed collaboratively with a peer or tutor. More specifically, I wish to compare across modes the quantity and quality of language-related episodes (LREs), defined by Swain (1998:70) as instances in which "students talk about the language they are producing, question their language use, or other- or self-correct", and claimed to positively impact language learning (Gass & Mackey 2007:186). LREs may differ in quality and quantity depending on whether tasks are performed in student-student dyads (often the case in face-to-face group EFL classes), student-teacher dyads (in private one-to-one tuition contexts), or by individual learners working alone (as in asynchronous online EFL learning contexts). The research has the potential to inform programme development, curricular designs, and individual learner decisions regarding course delivery mode. It also has broader social implications, given the growing interest in providing language courses online in order to make language education accessible to those who for geographical, financial or other reasons are unable to attend face-to-face lessons.

In this document the term "forms" refers to linguistic forms, i.e. aspects of English grammar, vocabulary, phonology and discourse.

Research questions

1) How do the quantity and quality of LREs differ when EFL learners do tasks in three different delivery modes: a) in face-to-face group classes (in learner-learner dyads), b) in one-to-one private tuition contexts (in learner-teacher dyads) and c) in an asynchronous online contexts (individually)?

2) What are the differences between the three delivery modes in terms of the level of learners' engagement in LREs, for example length and number of turns?

3) What evidence is there that the LREs are associated with learning of the forms focussed on within and across the three delivery modes?
4) What are the broader implications for delivery mode and language learning?

Settings

Classrooms within a group of private language schools in Spain. Learners who normally study online at home may be asked to attend an IH school to participate in the research.

My role in the organisation

I am the Managing Director of one of the schools in the group, but I have no role in the students' formal assessment and I do not control the students' course grades or outcomes.

Participants for the main study

n=40 adult Spanish upper-intermediate (Common European Framework B2 level) learners: 20 learners in 10 student-student dyads, 10 learners in 10 student-teacher dyads, and 10 individual learners. The study has a between-subjects design. The research takes place in intact classrooms, with learners who are already studying in one of the three contexts.

Approaching participants for the main and pilot studies

For learners studying in face-to-face groups and face-to-face one-to-one classes:

1) I will inform teachers about my research and ask for their permission to enter their classes.
2) I will briefly tell learners about the study, and hand out an information sheet and consent form for learners to take away.
3) The following week, I shall re-enter the classes and collect the forms signed by those who have agreed to participate.

For learners studying online:

1) I will send them an email, attaching the Participant Information Sheet and Informed Consent form.
2) Learners who wish to participate will email me back the signed and scanned consent form, or send me a physical copy by post.

Research methods

The study is an example of sociocultural classroom research, within a framework of Vygotskian Sociocultural Theory (SCT). It is a) observational – it involves an examination of learning events through data collection and analysis; b) interventionist – the researcher intervenes by applying a treatment (tasks and tests) to participants; c) quasi-experimental – comparisons are made between different groups; and d) mixed-

methods – the data collected (audio-recorded learner talk) is qualitative, but the analysis is both quantitative and qualitative.

Procedure for the main study

Assessment of prior knowledge	• Assessment of prior knowledge based on the results of an institutional placement test, course progress tests and coursework to date.
Task 1: language-focussed	• Participants perform **task 1** on tablet PCs. **Task 1** is a **language-focussed passage editing task** based on grammatical and lexical forms covered in previous lessons. Participants in student-student and student-teacher dyads talk together to complete the task; individual participants think aloud as they complete the task. Spoken output is audio-recorded and transcribed. Approximate time = 15 minutes.
Test 1	• **Tailor-made test 1** is produced, based on the forms focussed on in the LREs identified in participants' talk. To ensure validity, the same test is administered to all participants, even though they will not all have focussed on the same forms in their LREs. As there is no pre-test, learning gains for each participant are measured only in items relating to the forms focussed on by that participant in their LREs. Approximate time = 15 minutes.
Task 2: written composition	• **Task 2** is a **meaning-focussed written composition** on a topic that has been studied recently in class. Participants in dyads produce the composition collaboratively, while individual participants write alone. As they write, participants in the three contexts talk through, and make notes on, language issues that arise. Participants are audio-recorded, and data is transcribed and analysed for LREs. Approximate time = 15 minutes.
Test 2	• **Tailor-made test 2** is produced and administered, based on the forms focussed on in the LREs identified in task 2. Approximate time = 15 minutes.
Interviews and questionnaires	• Short unstructured interviews and questionnaires are applied to participants to further examine their quality of engagement in LREs. These interviews and questionnaires will also explore learners' reasons for choosing this delivery mode, their experiences with other delivery modes, the benefits and drawbacks they perceive in each mode, and any ideas or suggestions they they may have regarding how modes may be blended. These will be conducted in participants' L2 (English) - all participants will have a B2 (Upper-Intermediate) level of English, approximately. However, the interviewer will also speak their L1 (Spanish) , should participants need to code-switch. Approximate time = 30 minutes.

Time demand on participants

In the face-to-face group and face-to-face one-to-one contexts, the tasks will be done in regular class time. Since the tasks will be relevant to their course of study, participants will not be disadvantaged by "losing" class time to participate in my research; also, other students in the schools will not be disadvantaged by *not* participating in the research, as participants do not receive any additional teaching time.

Online learners do not have a set number of hours they must spend on the course – they are free to spend as many or as few hours studying alone as they wish. Therefore learners who participate in the study by allowing themselves to be recorded performing a task are not necessarily advantaged in terms of study time over non-participants.

Interviews will take place out of class time in the final week (see timeline below), and will take about 30 minutes per participant. The **total time demand** of the whole study on participants will be approximately 1.5 hours.

The pilot study

Aim

The pilot study aims to compare the language produced by learners doing language learning tasks alone at their computer at home with language produced by learners doing the same tasks alone at a computer in a language school, with the researcher sitting next to them in order to prompt the think-aloud protocol. The pilot will inform the methodology of the main study by providing data on the effectiveness of think-aloud protocols – prompted and unprompted – at eliciting LREs.

Procedure

The study will involve six participants, three in the "at-home unprompted" condition, three in the "in-school prompted" condition. These participants will be different from those involved in the main study.

The "at-home" participants will be asked to do one task (the passage editing task detailed below) at their home PC, thinking out loud as they do it, and recording themselves using an mp3 recorder e.g. on their mobile phone. They then email me the mp3 file and I analyse it for LREs.

The "in-school" participants will be asked to individually do the same passage-editing task at a PC in a language school, with the researcher (me) sitting next to them. I will prompt the learner to think aloud, e.g. by saying "tell me what you're thinking", if a learner edits or corrects part of the text without verbalising. I will record the task using an mp3 recorder, and analyse the recording for LREs.

Proposed timeline

Spring 2015:	pilot study	
Autumn 2015:	Week 1:	Assessment of prior knowledge; task 1
	Week 3:	Test 1
	Week 4:	Task 2
	Week 6:	Test 2; interviews and questionnaires

Task 1) Passage Editing

Read this email from a customer to a holiday apartment rental agency, and correct any problems you find with:

1) the grammar and vocabulary, and
2) the style (formal/informal) of the email

Hi Mrs Horowitz,

Just writing to say thanks a MILLION for your email about accommodation at your holiday apartments!

I got your brochure – which is really cool – so I now just want to catch a moment to confirm a booking for me and two friends. As I think I used to say in my last email, we'll getting in on the evening of Sunday, 11th November – but I'll give you a buzz before then to confirm the exact time we'll be turning out at the apartment. It can be quite late.

Which reminds me, you said that you can only take bookings from Saturday to Saturday? The thing is, it's innecessary for us to have the apartment on Saturday 10th, as we'll be arrived on the 11th, so any chance you could not charge for that night? It would be BRILLIANT if we won't have to pay! And just to avoid any disunderstandings, can you also just tell me what time we need to be out of the apartment on Sunday 18th? When we go on holiday we used to having a late check-out – is that OK with you?

Anyway, thanks again for everything. I might definitely put 400 pounds into your account as a deposit in the next few days.

Loads of love and see you soon!

Andy xxx

P.S. Any recommendations for cool places for us to go about at night-time? We really want to make advantage of our time there.

Task 2: Written composition

Write a letter to your local newspaper giving your opinion about this topic:

"Should we ban smoking everywhere – even at home?"

You might want to include comments about the following:

- Health issues related to smoking
- The importance of individual freedom
- Taxes on cigarettes
- Plus any ideas of your own.

First, make notes and decide which ideas will go into each paragraph. Then write your letter, and try to give emphasis to your opinions. Finally, read and check your letter for mistakes.

Prototype test items

Test items will be tailor-made (a-posteriori) based on the language focussed on in participants' LREs. For example, if learners engaged in an LRE about the correct prefix in the lexical item "unnecessary", a corresponding test item could be:

Circle the correct form:

a)   unnecessary   b) innecessary   c) imnecessary   d) disnecessary

If a learner in her writing produced the sentence "smoking can cause many different health's problems", and engaged in an LRE about this, a test item could be:

Look at this sentence and, if you think there is a mistake, correct it:
Smoking can cause many different health's problems.

Prototype Participant Questionnaire

Section 1: About you

Name: Age: ☐ 18-21   ☐ 22-29   ☐ 30-39   ☐ 40-49   ☐ 50-59   ☐ 60 or over

Do you identify yourself as: male?   ☐   female?   ☐

In which country did you receive your education?   _____

Profession: _____

Section 2: About your English studies

Number of years studying English: _____ Where did you learn English? _____

Main reason(s) for studying English (tick one or more):

     ☐ for enjoyment   ☐ for tourism   ☐ to improve work opportunities

     ☐ it's a requirement for my current job   ☐ it's a requirement for my school or university

     ☐ other (please specify: _____)

Current study mode (tick one):

     ☐ face-to-face group class   ☐ face-to-face one-to-one class   ☐ online self-study

Which kinds of English course have you done in the past? (tick one or more):

     ☐ face-to-face group classes ☐ face-to-face one-to-one classes   ☐ online self-study

     ☐ other (please specify: _____)

Section 3: About your reasons for choosing this course

Please tell us why you chose to study your current course mode. Rate each reason from 1 (not an important reason) to 4 (a very important reason) by putting ticks in the appropriate boxes:

		1	2	3	4
If you chose to study in a face-to-face group class:					
1	I like doing tasks in pairs or groups.				
2	I feel more comfortable in a big class than in a private class.				
3	I can get lots of speaking practice talking to other students.				
4	I want to learn general English, not a specific kind of English.				
5	I can get feedback (for example correction) from other students in the class.				
6	Group classes are better value for money.				
7	The location of the school makes it easy for me to get there.				
8	I like the routine of having fixed days and class times.				
	Other (please specify):				
If you chose to study in a face-to-face one-to-one class:					
1	I like doing tasks just with my teacher, without other students.				
2	I feel more comfortable in a private class than in a big class.				
3	I can get lots of speaking practice talking to my teacher.				
4	I want to learn a specific kind of English, not general English.				
5	I can get personalised feedback (for example correction) from my teacher.				
6	One-to-one classes are better value for money.				
7	The location of the school makes it easy for me to get there.				
8	I like the routine of having fixed days and class times.				
	Other (please specify):				
If you chose to study in an online self-study course:					
1	I like doing tasks alone.				
2	I feel more comfortable studying alone than studying with other people.				
3	I want to focus on language, reading, writing and listening, rather than speaking.				
4	I want to learn general English, not a specific kind of English.				
5	I can get personalised correction from the computer.				
6	Online courses are better value for money.				
7	Because of distance/location, I cannot make it to the school.				
8	I like the flexibility of being able to study whenever I want.				
	Other (please specify):				

Would you prefer to be studying in a different delivery mode?   ☐ yes   ☐ no

If "yes", which delivery mode would you prefer, and why?

_____

Thanks for your participation.

Prototype Interview guide

Beliefs about delivery modes and tasks in general

- In the questionnaire you say that these reasons (A, B and C) are important for you in your choice of course delivery mode. Can you tell me more about these reasons?
- In the questionnaire you say that you have studied in these delivery modes in the past. Can you tell me more about these experiences?
- Do you usually enjoy doing tasks with your partner / with your teacher / on your own? Why (not)?

Feelings about the tasks you did

- Tell me about completing the tasks: How did you feel? What did you think? What did you learn?
- Were the tasks similar or different from tasks you've done before?
- (Referring to specific points in transcript) Can you tell me what you were thinking here?
- Do you think it would have been more helpful for you to do this task with another student / with a teacher / alone? Why (not)?

Data analysis

The study employs a mixed-methods analytical approach in which transcribed learner talk is analysed qualitatively for emerging LRE categories (e.g. analysing, inferencing, self-assessment). This data is then coded for quantitative analysis, in order to make statistical comparisons between the three contexts. Test scores are also compared between the three contexts to investigate the association between LREs and learning.

RESEARCH ETHICS AT LANCASTER

Stage 1 Self-Assessment Form (Part A) – for Research Students

(To be completed by the student together with the supervisor in all cases: send signed original to Research Support)

Student name and email: Andrew Sampson, andrewesampson@yahoo.co.uk

Supervisor-name: Dr. Diane Potts   Department: LAEL

Title of project: Language-Related Episodes (LREs) and learning impact compared across three EFL course delivery modes.

Proposed funding source (if applicable):

1. Please confirm that you have read the code of practice, 'Research Ethics at Lancaster: a code of practice' and are willing to abide by it in relation to the current proposal? **Yes**

   If no, please provide explanation on separate page

2. Does your research project involve non-human vertebrates, cephalopods or decapod crustaceans? **No**   *If yes, have you contacted the Ethical Review Process Committee (ERP) via the University Secretary (Fiona Aiken)?* **?**

   If yes, you must complete Part B unless your project is being reviewed by an ethics committee

3a. Does your research project involve human participants i.e. including all types of interviews, questionnaires, focus groups, records relating to humans etc? **Yes**

3b. If the research involves human participants please confirm that portable devices (laptop, USB drive etc) will be encrypted where they are used for identifiable data **Yes**

3c. If the research involves human participants, are any of the following relevant:

   No The involvement of vulnerable participants or groups, such as children, people with a learning disability or cognitive impairment, or persons in a dependent relationship

   No The sensitivity of the research topic e.g. the participants' sexual, political or legal behaviour, or their experience of violence, abuse or exploitation

   Yes The gender, ethnicity, language or cultural status of the participants

   No Deception, trickery or other procedures that may contravene participants' full and informed consent, without timely and appropriate debriefing, or activities that cause stress, humiliation, anxiety or the infliction of more than minimal pain

   No Access to records of personal or other confidential information, including genetic or other biological information, concerning identifiable individuals, without their knowledge or consent

   No The use of intrusive interventions, including the administration of drugs, or other treatments, excessive physical exertion, or techniques such as hypnotherapy, without the participants' knowledge or consent

   No Any other potential areas of ethical concern? (Please give brief description)

4. Are any of the following potential areas of ethical concern relevant to your research?

   No Could the funding source be considered controversial?

   No Does the research involve lone working or travel to areas where researchers may be at risk (eg countries that the FCO advises against travelling to)? If yes give details.

   No Does the research involve the use of human cells or tissues other than those established in laboratory cultures?

   No Does the research involve non-human vertebrates?

   If yes, has the University Secretary signified her approval?   ?

   No Any other potential areas of ethical concern? (Please give brief description)

5. Please select **ONE** appropriate option for this project, take any action indicated below and in all cases **submit the fully signed original self-assessment to RSO.**

   ☐ **(a) Low risk, no potential concerns identified**
   The research does **NOT** involve human participants, response to all parts of Q.4 is 'NO'. No further action required once this signed form has been submitted to RSO

   ☐ **(b) Project will be reviewed by NHS ethics committee**
   Part B/Stage 2 not usually required, liaise with RSO for further information. If Lancaster will be named as sponsor, contact RSO for details of the procedure

   ☐ **(c) Project will be reviewed by other external ethics committee**
   Please contact RSO for details of the information to submit with this form

   ☐ **(d) Project routed to UREC via internal ethics committee**
   SHM and Psychology only. Please follow specific guidance for your School or Department and submit this signed original self-assessment to RSO

   ☐ **(e) Potential ethical concerns, review by UREC required**
   Potential ethical concerns requiring review by UREC, please contact RSO to register your intention to submit a Stage 2 form and to discuss timescales

   ☒ **(f) Potential ethical concerns but considered low risk, (a)-(e) above not ticked**
   Research involves human participants and/or response to one or more parts of Q.4 is 'YES' but ethical risk is considered low. Provide further information by completing PART B and submitting with this signed original PART A to RSO

Student signature: Date: 13/Mar/2015

Supervisor signature: Date:

Head of Department (or delegated representative)   Name:

Signature: Date:

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Ethical research at Lancaster: STAGE 1 SELF-ASSESSMENT (PART B)

This form should be completed if you have selected option 5(f) in Part A of the stage 1 self-assessment form, or following discussion with RSO. The information provided will be reviewed by the Chair of the University Research Ethics Committee (UREC). If you cannot easily fit the information within the space below, consider whether a stage 2 form would be more appropriate.

Principal Investigator/ Student name: Andrew Sampson

pFACT ID number (if applicable – staff only):

6. Please state the aims and objectives of the project (no more than 150 words, in lay-person's language):

My research aims to investigate the impact of three delivery modes (face-to-face group, face-to-face one-to-one, and online) of English as a Foreign Language (EFL) courses on learner interaction, and the significance for learning. I wish to examine the learning processes that occur when learners do language tasks alone, compared to when similar tasks are performed collaboratively with a peer or tutor. More specifically, I wish to compare across modes the quantity and quality of language-related episodes (LREs), defined by Swain (1998:70) as instances in which "students talk about the language they are producing, question their language use, or other- or self-correct", and claimed to positively impact language learning (Gass & Mackey 2007:186). The research has the potential to inform programme development and individual learner decisions regarding course delivery mode.

7. Please explain why you consider the ethical risk to be low, with particular reference to any areas of potential concern highlighted in Q.3 and Q.4 (PART A):

Although I shall access learners' initial placement tests, course progress tests and coursework to assess their language level, this data will not be quoted or reproduced in any way i.e. I can assure anonymity. Participants will be asked about their educational background and gender, but will remain anonymous. Their spoken output when doing tasks and in interviews may be quoted directly (any references to names will be anonymised). Spoken output will be recorded on mp3 recorders and, in the case of learners doing tasks individually, mobile phones. Participants will email me their recordings, and I will then ask them to delete the original files from their phones. (Continues in point 9, below).

8. If your research involves human participants, please summarise (as applicable) how participants will be recruited and consent obtained (copies of supporting documentation - information sheets, consent forms, questionnaires, interview schedules etc should be attached, if available*).

> Full supporting documentation attached   ☒
> Supporting documentation will be submitted if grant awarded   ☐
> Supporting documentation to be submitted later (please include details below)   ☐

For learners studying in face-to-face groups and face-to-face one-to-one classes, I will inform teachers about my research and ask for their permission to enter their classes. I will briefly tell learners about the study, and hand out an information sheet and consent form for learners to take away. The following week, I shall re-enter the classes and collect the forms signed by those who have agreed to participate. For learners studying online, I will send them an email, attaching the Information Sheet for Participants and Informed Consent form. Learners who wish to participate will email me back the signed and scanned consent form, or send me a physical copy by post.

9. If you have any other relevant information please provide details below:

While it may not be possible to encrypt mp3 players and phones, files will be transferred to my private PC as soon as possible after data collection, and then deleted from the mp3 recorders and phones. Files on my PC will be encrypted, password protected and, after 10 years, erased permanently. Questionnaires will be kept in a locked cupboard and destroyed after 10 years.

UNIVERSITY OF LANCASTER

PFACT project information and ethics questionnaire

(To be completed by the Principal Investigator in all cases)

Name of principal investigator: **ANDREW SAMPSON**

pFACT ID or Project Title: **Language-Related Episodes (LREs) and learning impact compared across three EFL course delivery modes**

1.   *General information*

    1.1   Have you, if relevant, discussed the project with

        ☐   the Data Protection Officer?

        ☐   the Freedom of Information Officer?

        ☑   N/A

    (Please tick as appropriate.)

    1.2   Is publication an intended outcome of the research?

        Y / N

    1.3   If yes to 1.2, is publication allowed under the funders' terms and conditions?

        Y / N / **N/A**

    1.4   Has a contract, terms and conditions, tender, acceptance form, or similar document requiring institutional approval, been received?

        Y / N / **N/A**

    1.5   Does any of the intellectual property to be used in the research belong to a third party?

        Y / N / **N/A**

    1.6   Are you involved in any other activities that may result in a conflict of interest with this research?

        Y / N / **N/A**

    1.7   Will you or research staff be working with an NHS Trust?

        Y / N / **N/A**

1.8   If yes to 1.7, what steps are you taking to obtain NHS approval?

        _____

        _____

1.9   If yes to 1.7, who will be named as sponsor of the project?

        _____

1.10   What consideration has been given to the health and safety requirements of the research?

/ **N/A**

1.11   Is a statement of institutional commitment to the research required?

                                                        Y / N / **N/A**

2.   *Information for insurance or commercial purposes*

        (*Please put N/A where relevant, and provide details where the answer is yes.*)

2.1   Will the research involve making a prototype?

                                                        Y / N / **N/A**

2.2   Will the research involve an aircraft or the aircraft industry?

                                                        Y / N / **N/A**

2.3   Will the research involve the nuclear industry?

                                                        Y / N / **N/A**

2.4   Will the research involve the specialist disposal of waste material?

                                                        Y / N / **N/A**

2.5   Do you intend to file a patent application on an invention that may relate in some way to the area of research in this proposal? If YES, contact Gavin Smith, Research and Enterprise Services Division. (ext. 93298)

                                                        Y / N / **N/A**

3. *Ethical information*

(*Please confirm this research grant will be managed by you, the principal investigator, in an ethically appropriate manner according to:*

(a)   the subject matter involved;
(b)   the code of practice of the relevant funding body; and
(c)   the code of ethics and procedures of the university.)

(*Please put N/A where relevant*)

3.1   Please tick to confirm that you are prepared to accept responsibility on behalf of the institution for your project in relation to the avoidance of plagiarism and fabrication of results.

☑

3.2   Please tick to confirm that you are prepared to accept responsibility on behalf of the institution for your project in relation to the observance of the rules for the exploitation of intellectual property.

☑

3.3   Please tick to confirm that you are prepared to accept responsibility on behalf of the institution for your project in relation to adherence to the university code of ethics.

☑

3.4   Will you give all staff and students involved in the project guidance on the ethical standards expected in the project in accordance with the university code of ethics?

Y / N / **N/A**

3.5   Will you take steps to ensure that all students and staff involved in the project will not be exposed to inappropriate situations when carrying out fieldwork?

Y / N / **N/A**

3.6   Is the establishment of a research ethics committee required as part of your collaboration? (This is a requirement for some large-scale European Commission funded projects, for example.)

Y / N / **N/A**

3.7   Does your research project involve human participants i.e. including all types of interviews, questionnaires, focus groups, records relating to humans, human tissue etc.?

Y / N / N/A

3.7.1   Will you take all necessary steps to obtain the voluntary and informed consent of the prospective participant(s) or, in the case of individual(s) not capable of giving informed consent, the permission of a legally authorised representative in accordance with applicable law?

Y / N / N/A

3.7.2   Will you take the necessary steps to find out the applicable law?

Y / N / **N/A**

3.7.3   Will you take the necessary steps to assure the anonymity of subjects, including in subsequent publications?

Y / N / N/A

3.7.4   Will you take appropriate action to ensure that the position under 3.7.1 – 3.7.3 are fully understood and acted on by staff or students connected with the project in accordance with the university ethics code of practice?

Y / N / **N/A**

3.13   Does your work involve animals? If yes you should specifically detail this in a submission to the Research Ethics Committee. The term animals shall be taken to include any vertebrate other than man. **N**

3.13.1   Have you carefully considered alternatives to the use of animals in this project? If yes, give details.

Y / N / **N/A**

_____

_____

3.13.2   Will you use techniques that involve any of the following: any experimental or scientific procedure applied to an animal which may have the effect of causing that animal pain, suffering, distress, or lasting harm? If yes, these must be separately identified.

Y / N / **N/A**

Signature:

Date: 13 March 2015

N.B.   Do not submit this form without completing and attaching the Stage 1 self-assessment form

Lancaster University

PARTICIPANT INFORMATION SHEET

Who is doing the study, and what is it about?
As part of my PhD studies in the Department of Linguistics and English Language, I am carrying out a study about how choosing to study online, in a group class, or with a tutor in a one-to-one class affects learning a language.

What does the study involve?
My study will involve making audio recordings of you doing language learning tasks. Depending on how you study English, I may record you with a partner in a group class, or with your teacher in a one-to-one class, or alone, thinking out loud while doing tasks. I am going to transcribe what you say when you do the tasks. I will invite you to complete a questionnaire and participate in an interview to find out how you feel when you do the tasks. The interview will take place out of class time and will take about 30 minutes.

Why are you asking me to participate?
I am asking you to participate because you are a student at upper-intermediate level and you are enrolled for a course in one of the three modes I am studying. I am interested in the way you use language to help you complete tasks during your course. I would be very grateful if you would agree to take part in my study.

What are the stages in the study? If
you decide to take part, you will:

Week 1:   Complete a grammar and vocabulary task, and I will audio-record you doing it.
Week 3:   You will do a short written test based on the first task.
Week 4:   You will do another task – a written composition – and I will audio-record you again.
Week 6:   You will do a short test based on the second task, and I will interview you to ask you how you felt during the tasks, and give you a questionnaire.

I will also look at your placement test, course progress tests and coursework to date, in order to assess your current language level.

The study will take place over a six-week period during the 2015-2016 school year, which begins in October 2015 and ends in June 2016.

Can I decide to withdraw from the study?
You are free to withdraw from the study at any time. If you withdraw during the six weeks that the study is taking place, or until one month after that period, I will not use any of the information that you provide. If you withdraw later, the information you share with me will be used as part of the study.

Anonymity
At every stage, your name will remain anonymous. Unless you instruct me to do otherwise, in my thesis and other publications I will never use your real name.

Data protection and storage
The data will be kept securely: papers will be kept in a locked cupboard in my office in the school, and audio files will be kept securely on my personal computer, which will be encrypted and password protected, and only I will have access to this computer. Data will be retained for 10 years after you have completed the tasks. Data will be used for educational and academic purposes only: these will include my PhD dissertation and other publications, for example journal articles, and conference presentations.

My role in the school
I am the Managing Director of the School, but I have no role in your formal assessment and I do not control your course grades or outcomes.

If you have any queries about the study, please feel free to contact me. My contact details are:

Andrew Sampson
C/ Mateu Obrador 7B
Palma 07011
Spain
00 34 971 726408
andrewesampson@yahoo.co.uk

If you want to contact my thesis supervisor, Dr. Diane Potts, her details are:

Dr. Diane Potts
Department of Linguistics and English Language
Lancaster University
Bailrigg LA1 4YW
UK
01524 592434
d.j.potts@lancaster.ac.uk

If you want to contact the Head of Department, Prof. Elena Semino (this is also the person to contact if you wish to make a complaint), her details are:

Prof. Elena Semino
Department of Linguistics and English Language
Lancaster University
Bailrigg LA1 4YW
UK
01524 594176
e.semino@lancaster.ac.uk

This study has been reviewed and approved by members of Lancaster University Research Ethics Committee.

Department of Linguistics and English Language

CONSENT FORM

Project title: **Language-Related Episodes (LREs) and learning impact compared across three EFL course delivery modes.**

1.   I have read and had explained to me by **Andrew Sampson** the Participant Information Sheet relating to this project.

2.   I have had explained to me the purposes of the project and what will be required of me, and any questions have been answered to my satisfaction. I agree to the arrangements described in the Participant Information Sheet in so far as they relate to my participation.

3.   I understand that my participation is entirely voluntary and that I have the right to withdraw from the project any time. I understand that if I withdraw from the study more than one month after I have completed the tasks, the information I have provided will be used for the project.

4.   I understand that at every stage, my name will remain anonymous, unless I instruct otherwise.

5.   I agree to take part in the study and I consent to being audio recorded and for this data to be retained for up to 10 years after I have completed the tasks.

6.   I have received a copy of this Consent Form and of the accompanying Participant Information Sheet.

Name:

Signed:

Date:

MES 2015

<u>HOJA INFORMATIVA PARA PARTICIPANTES</u>

Dentro de mis estudios doctorales del Departamento de Lingüística y Lengua Inglesa de la Universidad de Lancaster, estoy realizando una investigación sobre el impacto que pueda tener sobre el aprendizaje de un idioma la decisión de estudiar o en línea, o en una clase presencial y grupal, o con un tutor en una clase particular. Mi investigación consistirá en realizarte grabaciones de audio, haciendo tareas de aprendizaje. Dependiendo de cómo estudies, puede que te haga grabaciones con una pareja haciendo tareas en una clase grupal, o con tu profesor en una clase particular, o estando solo/a, pensando en voz alta. También te voy a pedir que contestes a un cuestionario y entrevistarte para averiguar cómo te sientes cuando haces las tareas. La entrevista será fuera del horario de clase y durará unos 30 minutos.

Estoy pidiendo tu participación porque eres un estudiante en el nivel intermedio superior y estás matriculado en una de las tres modalidades que estoy investigando. Me interesa tu forma de utilizar la lengua inglesa mientras completas las tareas durante tu curso de estudios. Estaría muy agradecido si pudieras aceptar participar en mi investigación.

Si decides participar:
1) Completarás una tarea de gramática y vocabulario, y te haré una grabación de audio haciéndola.
2) Unos días después, harás una breve prueba escrita basada en la primera tarea. 3) Harás otra tarea – escribirás un texto – y otra vez te haré una grabación de audio mientras la hagas.
4) Unos días después, harás una breve prueba escrita basada en la segunda tarea. 5) Te entrevistaré para preguntarte cómo te has sentido haciendo las tareas.

También examinaré tu test de nivel, las pruebas de progreso que hayas hecho hasta la fecha, y tus tareas y deberes, para poder evaluar tu nivel lingüístico actual.

Eres libre de retirarte de mi investigación en cualquier momento. Si te retiras mientras la investigación esté en progreso, o hasta dos meses después de la finalización de la misma, no utilizaré ningún dato relacionado contigo. Si te retiras después, la información aportada por ti será utilizada como parte del estudio. En todo momento, tu nombre será anónimo. Los datos se guardarán de forma segura: los papeles se quedarán bajo llave dentro de un armario, y los archivos de audio se guardarán de forma segura en mi ordenador privado, el cual será cifrado y protegido con contraseña, y sólo se utilizarán para fines educativos y académicos. Estos incluirán mi tesis de PhD y otras publicaciones, por ejemplo artículos en revistas académicas, y presentaciones en conferencias. A menos que me digas al contrario, nunca utilizaré tu nombre verdadero.

Si tienes alguna duda sobre la investigación, por favor no dudes en contactarme. Mis datos son:

Andrew Sampson
C/ Mateu Obrador 7B
Palma 07011
Spain
00 34 971 726408
andrewesampson@yahoo.co.uk

Si quieres contactar con mi supervisora de tesis, la Dra. Diane Potts, sus datos son:

Dr. Diane Potts
Department of Linguistics and English Language
Lancaster University
Bailrigg LA1 4YW
UK
01524 592434
d.j.potts@lancaster.ac.uk

Si quieres contactar con la Jefa de Departamento, Prof. Elena Semino, sus datos son:

Prof. Elena Semino
Department of Linguistics and English Language
Lancaster University
Bailrigg LA1 4YW
UK
01524 594176
e.semino@lancaster.ac.uk

Firmado

Andrew Sampson
andrewesampson@yahoo.co.uk

Departamento de Lingüística y Lengua Inglesa

HOJA DE CONSENTIMIENTO

Título del Proyecto: ***Episodios Relacionados con el Lenguaje* y su impacto sobre el aprendizaje, comparado entre tres modalidades de cursos de inglés como lengua extranjera**

1.   He leído, y me ha explicado **Andrew Sampson**, la Hoja Informativa relacionada con este proyecto.

2.   Me han explicado los objetivos de este proyecto y lo que será requerido de mi parte, y han sido resueltas satisfactoriamente las preguntas que yo haya tenido. Estoy de acuerdo con los procedimientos en cuanto a mi participación descritos en la Hoja Informativa.

3.   Entiendo que mi participación es totalmente voluntaria y que tengo el derecho de retirarme del proyecto en cualquier momento, pero no después de los dos meses de haber finalizado el proyecto. Si me retiro después de esa fecha, la información que yo haya proporcionado será utilizada en el proyecto.

4.   He recibido una copia de esta Hoja de Consentimiento y de la Hoja Informativa que la acompaña.

Nombre:

Firma:

Fecha:

Appendix 5: Lancaster University Ethics Approval

Ethics application approved UREC REFERENCE:

☐ Ethics (RSO) Enquiries
☐ Jun 8 at 7:04 PM

To
☐ Sampson, Andrew

CC
☐ Potts, Diane

Dear Andrew

Thank you for submitting your completed stage 1 self assessment form and additional information for **Language related episodes (LREs)and learning impact compared across three EFL course delivery modes.** The Part B information has been reviewed by members of the University Research Ethics Committee and I can confirm that approval has been granted for this project.

As principal investigator your responsibilities include:

- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licenses and approvals have been obtained;

- reporting any ethics-related issues that occur during the course of the research or arising from the research (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress) to the Research Ethics Officer;

- submitting details of proposed substantive amendments to the protocol to the Research Ethics Officer for approval.

Please contact the Research Ethics Officer, Debbie Knight (ethics@lancaster.ac.uk 01542 592605) if you have any queries or require further information.

Kind regards,

Debbie

Debbie Knight | Research Ethics Officer | Email: ethics@lancaster.ac.uk | Phone (01524) 592605 | Research Support Office, B58 Bowland Main, Lancaster University, LA1 4YT
Web: Ethical Research at Lancaster: http://www.lancaster.ac.uk/depts/research/ethics.html
www.lancaster.ac.uk/50

APPENDIX 6: PARTICIPANT INFORMATION SHEET and CONSENT FORM

Who is doing the study, and what is it about?

As part of my PhD studies in the Department of Linguistics and English Language, I am carrying out a study about how choosing to study online, in a group class, or with a tutor in a one-to-one class affects learning a language.

What does the study involve?

My study will involve making audio recordings of you doing language tasks. Depending on how you study English, I may record you with a partner in a group class, or with your teacher in a one-to-one class, or alone, thinking out loud while doing tasks. I am going to transcribe what you say when you do the tasks. I will invite you to complete a questionnaire and participate in an interview to find out how you feel when you do the tasks.

Why am I asking you participate?

I am asking you to participate because you are a student at a higher level and you are enrolled for a course in one of the three modes I am studying. I am interested in the way you use language to help you complete tasks during your course. I would be very grateful if you would agree to take part in my study.

What are the stages in the study?

If you decide to take part, you will (estimated times are approximate):

1) Complete a grammar and vocabulary task, and I will audio-record you doing it (10 minutes)
2) You will do a short written test based on the first task (10 minutes)
3) You will do another task (a written composition) and I will audio-record you again (15 minutes)
4) I will interview you to ask you how you felt during the tasks, and give you a questionnaire (20 minutes)

I will also look at your placement test, course progress tests and coursework to date, in order to assess your current language level.

Can you decide to withdraw from the study?

You are free to withdraw from the study at any time. If you withdraw during the period that the study is taking place, or until one month after that period, I will not use any of the information that you provide. If you withdraw later, the information you share with me will be used as part of the study.

Anonymity

At every stage, your name will remain anonymous. Unless you instruct me to do otherwise, in my thesis and other publications **I will never use your real name**.

Data protection and storage

The data will be kept securely: papers will be kept in a locked cupboard in my office in the school, and audio files will be kept securely on my personal computer, which will be encrypted and password protected, and only I will have access to this computer. Data will be retained for 10 years after you have completed the tasks. Data will be used for educational and academic purposes only: these will include my PhD dissertation and other publications, for example journal articles, and conference presentations.

My role in the school

I am the Managing Director of the School, but I have no role in your formal assessment and I do not control your course grades or outcomes.

If you have any queries about the study, please feel free to contact me. My contact details are:

Andrew Sampson

C/ Mateu Obrador 7B

Palma 07011

Spain

00 34 971 726408

andrewesampson@yahoo.co.uk

If you want to contact my thesis supervisor, Dr. Diane Potts, her details are:

Dr. Diane Potts

Department of Linguistics and English Language

Lancaster University

Bailrigg LA1 4YW

UK

01524 592434

d.j.potts@lancaster.ac.uk

If you want to contact the Head of Department, Prof. Elena Semino (this is also the person to contact if you wish to make a complaint), her details are:

Prof. Elena Semino

Department of Linguistics and English Language

Lancaster University

Bailrigg LA1 4YW

UK

01524 594176

e.semino@lancaster.ac.uk

This study has been reviewed and approved by members of Lancaster University Research Ethics Committee.

Department of Linguistics and English Language

CONSENT FORM

Project title: **Language-Related Episodes (LREs) and learning impact compared across three EFL course delivery modes.**

1.   I have read and had explained to me by **Andrew Sampson** the Participant Information Sheet relating to this project.

2.   I have had explained to me the purposes of the project and what will be required of me, and any questions have been answered to my satisfaction. I agree to the arrangements described in the Participant Information Sheet in so far as they relate to my participation.

3.   I understand that my participation is entirely voluntary and that I have the right to withdraw from the project any time. I understand that if I withdraw from the study more than one month after I have completed the tasks, the information I have provided will be used for the project.

4.   I understand that at every stage, my name will remain anonymous, unless I instruct otherwise.

5.   I agree to take part in the study and I consent to being audio recorded and for this data to be retained for up to 10 years after I have completed the tasks.

6.   I have received a copy of this Consent Form and of the accompanying Participant Information Sheet.

Name:

Signed:

Date:

Lancaster
University

HOJA INFORMATIVA PARA PARTICIPANTES

¿Quién está realizando este estudio, y de qué se trata?

Dentro de mis estudios doctorales del Departamento de Lingüística y Lengua Inglesa de la Universidad de Lancaster, estoy realizando una investigación sobre el impacto que pueda tener sobre el aprendizaje de un idioma la decisión de estudiar o en línea, o en una clase presencial y grupal, o con un tutor en una clase particular.

¿En qué consiste el estudio?

Mi investigación consistirá en realizarte grabaciones de audio, haciendo tareas de lenguaje. Dependiendo de cómo estudies, puede que te haga grabaciones con una pareja haciendo tareas en una clase grupal, o con tu profesor en una clase particular, o estando solo/a, pensando en voz alta. Voy a transcribir lo que digas cuando hagas las tareas. Te invitaré a que contestes a un cuestionario y entrevistarte para averiguar cómo te sientes cuando haces las tareas.

¿Por qué estoy pidiendo que participes?

Estoy pidiendo tu participación porque eres un estudiante en el nivel intermedio superior y estás matriculado en una de las tres modalidades que estoy investigando. Me interesa tu forma de utilizar la lengua inglesa mientras completas las tareas durante tu curso de estudios. Estaría muy agradecido si pudieras aceptar participar en mi investigación.

¿Cuáles son las etapas del estudio?

Si decides participar (las duraciones son aproximadas):

1) Completarás una tarea de gramática y vocabulario, y te haré una grabación de audio haciéndola (10 minutos).
2) Harás una breve prueba escrita basada en la primera tarea (10 minutos).
3) Harás otra tarea (escribirás un texto) y otra vez te haré una grabación de audio mientras la hagas (15 minutos).
4) Te entrevistaré para preguntarte cómo te has sentido haciendo las tareas (20 minutos).

También miraré tu test de nivel, las pruebas de progreso que hayas hecho hasta la fecha, y tus tareas y deberes, para poder evaluar tu nivel lingüístico actual.

¿Puedes retirarte de la investigación?

Eres libre de retirarte de mi investigación en cualquier momento. Si te retiras mientras la investigación esté en progreso, o hasta un mes después de la finalización de la misma, no utilizaré ningún dato relacionado contigo. Si te retiras después, la información aportada por ti será utilizada como parte del estudio.

Anonimidad

En todo momento, tu nombre será anónimo. A menos que me digas al contrario, nunca utilizaré tu nombre verdadero.

Protección y almacenaje de datos

Los datos se guardarán de forma segura: los papeles se quedarán bajo llave dentro de un armario, y los archivos de audio se guardarán de forma segura en mi ordenador privado, el cual será cifrado y protegido con contraseña, y sólo yo tendré acceso a éste. Los datos se retendrán durante 10 años después de que hagas las tareas y sólo se utilizarán para fines educativos y académicos. Estos incluirán mi tesis de PhD y otras publicaciones, por ejemplo artículos en revistas académicas, y presentaciones en conferencias.

Mi papel en la Escuela

Soy el Director de la Escuela, pero no tengo ningún papel en tu evaluación formal y no control las notas o los resultados del curso.

Si tienes alguna duda sobre la investigación, por favor no dudes en contactarme. Mis datos son:

Andrew Sampson

C/ Mateu Obrador 7B

Palma 07011

Spain

00 34 971 726408

andrewesampson@yahoo.co.uk

Si quieres contactar con mi supervisora de tesis, la Dra. Diane Potts, sus datos son:

Dr. Diane Potts

Department of Linguistics and English Language

Lancaster University

Bailrigg LA1 4YW

UK

01524 592434

d.j.potts@lancaster.ac.uk

Si quieres contactar con la Jefa de Departamento, Prof. Elena Semino (también es la persona de contacto si quieres poner alguna queja), sus datos son:

Prof. Elena Semino

Department of Linguistics and English Language

Lancaster University

Bailrigg LA1 4YW

UK

01524 594176

e.semino@lancaster.ac.uk

Esta investigación ha sido evaluada y aprobada por la junta del Comité de Ética Investigativa de la Universidad de Lancaster.

Departamento de Lingüística y Lengua Inglesa

HOJA DE CONSENTIMIENTO

Título del Proyecto: ***Episodios Relacionados con el Lenguaje* y su impacto sobre el aprendizaje, comparado entre tres modalidades de cursos de inglés como lengua extranjera**

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2.   Me han explicado los objetivos de este proyecto y lo que será requerido de mi parte, y han sido resueltas satisfactoriamente las preguntas que yo haya tenido. Estoy de acuerdo con los procedimientos en cuanto a mi participación descritos en la Hoja Informativa.

3.   Entiendo que mi participación es totalmente voluntaria y que tengo el derecho de retirarme del proyecto en cualquier momento. Entiendo que si me retiro después de un mes de haber finalizado el proyecto, la información que yo haya proporcionado será utilizada en el proyecto.

4.   Entiendo que en todo momento, mi nombre será anónimo, a menos que yo pida al contrario.

5.   Estoy de acuerdo con participar en el estudio y doy mi consentimiento para que se me hagan grabaciones de audio y para que estos datos se guarden hasta 10 años después de que haya completado las tareas.

6.   He recibido una copia de esta Hoja de Consentimiento y de la Hoja Informativa que la acompaña.

Nombre:

Firma:

Fecha:

Appendix 7: Written Composition

Write a letter to your local newspaper giving your opinion about this topic:

"Should we ban smoking everywhere – even at home?"

You might want to include comments about the following:

- Health issues related to smoking
- The importance of individual freedom
- Taxes on cigarettes
- Plus any ideas of your own.

First, make notes and decide which ideas will go into each paragraph. Then write your letter, and try to give emphasis to your opinions. Finally, read and check your letter for mistakes.

Appendix 8: Post-test (Isomorphic Passage Editing Task)

Read this email from a student to a University in the UK, and correct any problems / errors.

Remember to consider the full range of possible errors. These may include:

- **Grammar**
- **Vocabulary**
- **Spelling**
- **Punctuation**
- **Style (formal / informal)**

Hi Mrs. Horowitz,

Just letting you know that I've now received the extra information you sent me about language formation on England, thanks a MILLION, once again. The university studies at spain are BRILLIANT for subjects like Enginneering , for the languages I think it's better in the UK, so it'll be really cool to study there. Any recommendations for an english certification to acredit previous formation? I have seen that we would make an English test in the first week, but what does it consist in? Before I leave Spain I'll check your website again to see if there is things I need to bring, and I should give you a buzz if I have any questions – any chance you can confirm if there are a phone number on your webpage?

Bye for now and see you soon,

Andy

Appendix 9: Interview Guide

Beliefs about delivery modes and tasks in general

- In the questionnaire you say that these reasons are important for you in your choice of course delivery mode. Can you tell me more about these reasons?

- In the questionnaire you say that you have studied in these delivery modes in the past. Can you tell me more about these experiences?

- Do you usually enjoy doing tasks with your partner / with your teacher / on your own? Why (not)?

- Do you think you have developed special strategies for working with your partner / with your teacher / on your own? Why (not)?

Feelings about the tasks you did

- Tell me about completing the tasks: How did you feel? What did you think? What did you learn?

- In the passage editing task, did you read it through before you began to correct?

- Were the tasks similar or different from tasks you've done before?

- (Referring to specific points in transcript) Can you tell me what you were thinking here?

- Do you think it would have been more helpful for you to do this task with another student / with a teacher / alone? Why (not)?

Appendix 10: Transcription Conventions
(adapted from Jefferson 2004)

- A comma (,) = a short pause of one second or less

- Three dots (…) = a pause longer than one second

- double quotation marks " " = reading out loud from the original text or rubric

- *italics* = L1 (Spanish)

- square brackets [] = gloss of L1 (Spanish) use

- @ = laughter

- XX = indecipherable utterance

- ? = rising intonation e.g. a question

- utterances indented and placed directly above each other = overlapping speech

Appendix 11: LRE Categories

	Category	Abbreviation	Subcategory	Abbreviation
Focus	Lexis	LE		
	Grammar	GR	Tense / mood / aspect	TE
			Morphology	MO
			Syntax	SY
	Mechanics	ME	Spelling	SP
			Punctuation	PU
			Capitalisation	CA
			Contractions	CT
	Discourse	DI	Register	RE
			Text Cohesion	TC
Resolution	Correctly resolved	CR		
	Incorrectly resolved	IR		
	Unresolved	UR		
Engagement	Elaborate	E		
	Limited	L		
	Elaborate + limited	E+L		

P1 = GEORGINA, P2 = GEMA

	Dialogue
P1	OK, well this is formal no?
P2	Yes is formal because it's a student and he is, er, Andy, he is writing to, to
P1	To a university no? So this "Hi"… first, this is not right
P2	No it is not right, it needs to be much more formal, maybe Esteemed, er,
P1	I think Dear
P2	OK yes, Dear, Dear Mrs or Dear Mister
P1	And "thanks a MILLION", this is a problem here, this in capital, capital
P1	capital letters
P2	Yes, thank you a million for your email but is not, not should be in capital
P1	Thank you a million no, is informal, we I think er…. maybe is better…
P2	Maybe is better the, I mean, maybe we need to delete million
P1	A million?
P2	Yes
P2	OK, delete, and maybe the same with BRILLIANT, here below
P1	This "just writing", this is OK? @
P2	"Just writing"?
P1	Is not better I am just writing
P2	Yes, I think you're right, because is more formal, not the the, the contraction…
P1	XX What about, what about this, er Spain
P2	Ah yes, Spain we need the capital letter
P1	Spain
P2	This is a country always… have capital letters…
P1	And the nationalities too I think, so… is better in Russian with the capital letters
P2	In Russian, yes, and also the contraction it'll, is this OK in formal, er, the formal style?
P1	I think no, and "cool" @ this is to the, the right kind of er… of er style
P2	Yes, university style
P1	Formal style…
P2	All this is OK, I think… all correct…
P1	OK, "if I would come to study", this is not correct no?
P2	is correct, no?
P1	Erm no, it's if I will come, future, in the future
P2	Ah yes, is future
P1	And, how much … is like, how much is not for this formal letter, is more like how much is the taxi or how much is this, er… I don't know, but not the university
P2	Hmm, maybe I agree, but it says how much…
P1	Is very informal no? And here another contraction, "I'm sure"
P2	"I'm sure" again a contraction here…
P1	Wait, I think other problems are here, in, in the beginning… "not only English, but other languages too, in my country," here is necessary a full stop… perfect… "in my country, it is impossible"… this is with double S no?
P2	Ah yes… "to find good courses in Chinese or the Russian, although it depends of the place, so it'll be really cool to study these languages in your university"…
P1	"Which reminds me"… what remind him? I really do not understand this here…
P2	No, me too… is very long and I do not know really the meaning here…
P1	"can you give me an approximate cost of the courses? If I would come to study with you, how much would I need to pay in total? If I pay a deposit now, how much time shall I have to pay the rest of the money? I'm sure the formation will be BRILLIANT"… I do not know, except that it is bad, it is very bad
P1	You can not er put, place, would be after if… would be
P2	If I come? Or if I came? .. to study with you ... to think that maybe this is er…
P1	"Would I need to pay in total"
P2	If I came
P1	I came
P2	Right?
P1	Yes
P2	"If I pay a deposit now, how much time shall I have to pay the rest of the money?" Shall is OK here?
P1	Shall, is like… will
P2	So is the correct, er correct option, or correct choice
P1	Yes, the answer is er shall

Coding columns (headers):

FOCUS										RESOLUTION			ENGAGEMENT				INITIATOR		RESOLVER				M GD	TI	P1 POSTTEST					
LE	TE	MO	SY	RE	TC	SP	PU	CA	CT	CR	IR	UR	P1	P2	P1+P2	NO	P1	P2	P1	P2	P1+P2	NO	MG	TI	AT	RA	RD	RN	RP	NON

P2 "How much time shall I have to pay the rest of the money? How much time shall I have to pay the rest of the money, how much time"? Is OK?

P1 Or how long

P2 Yes, how long is better I think…

P1 How long…

P2 How long shall I have

P1 "I'm sure the formation will be BRILLIANT, I'm really looking forward to studying in the UK, but apart from the studies" … is very long this

P2 Yes, may maybe is necessary no the, the comma, we need the point

P1 Point, yes…

P2 Here, after brilliant… brilliant…. will be brilliant…

P1 "time for making leisure activities is also a priority for me"…

P2 "time for making leisure activities is also a priority"…

P1 Here, he's talking about, er "If I pay a deposit now, how much time shall I have to pay the rest of the money?"… but is pay? Or better in the past, "paid"? Or "if I have to pay a deposit now"… this about money all this thing…

P2 er… paid, if I paid

P1 past?

P2 Yes…. Is not past in the, er meaning, is past in the form only, is con, conditional…

P1 Ah conditional sentences, OK

P2 Like, "if I give you a buzz on the phone number you put in your email, are there a chance you can tell me more?"… we need past?

P1 Yes, is similar, if I give, gave, gave you a buzz

P2 What is a buzz?

P1 Is like a message, a message, a text message I think

P2 "There were something in your email about what students can do in their free time at the weekends – if I give you a buzz on the phone number you put in your email, are there a chance you can tell me more? Bye for now and see you soon!"…

P1 "I'm sure the formation will be brilliant, I'm really looking forward to studying in the UK"…

P2 I'm sure that… training

P1 Is OK formation… or training

P2 OK, leave formation…

P1 "brilliant"… this in capital we change no?

P2 Yes, is very informal…

P1 What is leisure?

P2 Er, it is free time, like *ocio*

P1 *Ocio*? Ah OK… the leisure activities… is correct here?

P2 Yes I think…

P1 "There were something in your email about what students can do in their free time at the weekends – if I give you a buzz on the phone number you put in your email, are there a chance you can tell me more? Bye for now and see you soon!"… I think is OK

P2 OK, yes, I think we finished

TOTALS: 4 5 0 1 5 1 1 2 4 2 17 4 4 5 3 9 8 19 6 6 6 9 4 4 21 5 4 0 0 1 12

Appendix 13: Sample Completed post-test (Georgina)

Read this email from a student to a University in the UK, and correct any problems / errors.

Remember to consider the full range of possible errors. These may include:

- Grammar
- Vocabulary
- Spelling
- Punctuation
- Style (formal / informal)

style: informal

(Hi) Mrs. Horowitz,

Just letting you know that I've now received the extra information you sent me about language formation

in

~~on~~ England, thanks a MILLION, once again. The university studies ~~at~~ *in* spain are BRILLIANT for subjects like

~~Enginneering~~, ~~for the languages~~ *but for learning languages* I think it's better in the UK, ~~so~~ it'll be really cool to study there. Any

recommendations for an english certification to ~~acredit~~ previous formation? I have seen that we ~~would~~ *will*

do

~~make~~ an English test in the first week, but what does it consist in? Before I leave Spain I'll check your

website again to see if there ~~is things I need to bring~~, *I need to bring some things* and I should give you a buzz ~~if I have any questions~~ — *in the case I had*

any chance you can confirm if there ~~are~~ a phone number on your webpage? *I would know if there is a contact*

? meaning?

Bye for now and see you soon, → *Informal style*

See you soon and thank you.

Andy