A Comparison of Learning Outcomes Between EFL Course Delivery Modes

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Abstract

This paper reports on a mixed-methods classroom study that compared the effectiveness of three adult English as a Foreign Language (EFL) course delivery modes – face-to-face group classes, face-to-face one-to-one tuition, and online self-study – for language learning. Learning outcomes from 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 "Focus on Form" 70) were observed as learners completed the same task in their respective course delivery modes: learner-learner dyads in face-to-face classes, learner-teacher dyads in one-to-one classes, and individuals in online self-study. Learning was operationalized in two ways: firstly, by identifying instances of microgenetic development - that is, observable changes in a learner's knowledge – within learners' LREs; and secondly, by analysing responses to a delayed post-test. The results indicate that significantly more microgenetic development took place in one-to-one interaction between teachers and learners, which was characterised by scaffolded support and learner uptake, than in pair-work or self-study. While little microgenetic development was evident in the think-aloud protocols of self-study learners, the methodological constraint of employing a think-aloud protocol to observe individual LREs may have made observing development more difficult. Learners' post-test responses revealed that one-to-one and self-study learners attempted a significantly higher proportion of test items relating to LREs produced in the task than group learners, suggesting stronger associations between languaging and learning in teacher-learner interaction and independent study than in pair-work. Pedagogical recommendations are proposed for maximising learning potential in all three modes.

Keywords: Delivery Modes; Online Learning; Peer Interaction; Pair Work; Scaffolding; Microgenetic Development

Resumo

Este artigo relata um estudo de metodologia mista em sala de aula, comparando a eficácia de três modos de ensino/aprendizagem de Inglês como Língua Estrangeira para adultos – aulas de grupo presenciais, aulas individuais presenciais, e autoestudo em formato digital. Foram

observados os resultados de aprendizagem dos Episódios Relacionados com a Língua (LREs) dos alunos, instâncias em que os alunos refletem sobre o uso da língua - "talk about the language they are producing, question their language use, or other- or self-correct" (Swain "Focus on Form" 70) - à medida que realizam a mesma tarefa nos respetivos modos de ensino: díades aluno/aluno em aulas presenciais, díades aluno/professor em aulas individuais, e indivíduos em autoestudo online. A aprendizagem foi operacionalizada de duas formas: em primeiro lugar, através da identificação de instâncias de desenvolvimento microgenético – ou seja, mudanças observáveis no conhecimento de um aluno – nos LREs dos alunos; e, em segundo lugar, através da análise das respostas a um pós-teste diferido. Os resultados indicam que se verificou um desenvolvimento microgenético significativamente maior na interação individual entre professor e aluno do que no trabalho de pares, ou no autoestudo, sendo esse desenvolvimento caracterizado por um apoio estruturado por parte do professor e pela aprendizagem consequente do aluno. Embora o desenvolvimento microgenético tenha sido pouco evidente nos protocolos de pensamento em voz alta dos alunos em autoestudo, a limitação metodológica de empregar um protocolo de pensamento em voz alta para observar LREs individuais pode ter dificultado a observação do seu desenvolvimento. As respostas dos alunos no pós-teste revelaram que os alunos em aulas individuais e em autoestudo tentaram uma proporção significativamente mais elevada de itens de teste relacionados com as LREs produzidas na tarefa do que os alunos que tiveram aulas em grupo, o que sugere associações mais fortes entre a linguagem e a aprendizagem na interação professor-aluno e no estudo independente do que no trabalho de pares. São propostas recomendações pedagógicas para maximizar o potencial de aprendizagem nos três modos.

Palavras-chave: Modos de entrega; Aprendizagem digital; Interação entre pares; *Scaffolding*; Desenvolvimento microgenético

1. Introduction

Private-sector adult EFL learners are often given a choice regarding their mode of course delivery: traditional face-to-face group classes, face-to-face one-to-one classes, or online learning (either synchronous or asynchronous). Learners may approach this choice with preconceived ideas about the effectiveness of each mode: one-to-one learning, for example, may be perceived as more effective than group classes, and therefore warranting the higher prices charged for private tutoring; online learning, conversely, may be viewed as a last resort for learners who for geographical, financial or other reasons are unable to regularly attend face-to-face classes. However, the differences between these three modes of EFL study in terms of how much learning occurs have been under-researched. The present study aimed to address this issue by comparing learning outcomes from the same task between the three modes of adult EFL study offered by a private language school in Spain: face-to-face group classes, one-to-one private tuition, and asynchronous online self-study.

2. Literature review

2.1 Studies comparing online self-study with face-to-face group classes

A US Department of Education meta-analysis comparing online self-study with face-to-face group classes found slightly better learning outcomes for online learning, although relatively few of the studies included focused on adult language education. Within language teaching, Zhao's synthesis of research comparing asynchronous computer-assisted language learning (CALL) and traditional instruction concluded that CALL applications are as effective as, if not more effective than, traditional classroom learning, with the increased time online learners spend with materials contributing to this greater effectiveness.

Given the limited research addressing differences in learning outcomes between online self-study and face-to-face group language classes, studies comparing individual task performance with pair-work, which is a commonly employed interaction pattern in group classes, can be drawn on to gain additional insights. Such studies have thus far yielded mixed results. Nassaji & Tian found that although dyads demonstrated greater accuracy than individuals completing cloze and text editing tasks seeded with phrasal verbs, there were no significant differences in learning gains as measured by post-tests. Likewise, Kuiken & Vedder compared the accuracy of individuals and pairs in the use of the passive voice in two dictogloss (text reconstruction) tasks, finding no significant differences during the task or in delayed post-tests.

Kim found that Korean as a Second Language learner dyads completing a dictogloss were able to pool knowledge and correctly resolve most LREs, although individuals thinking aloud while completing the same task tended to leave LREs unresolved, since they had no resources to draw on other than their own knowledge. Dyads also showed significantly higher gain scores than individuals on immediate and delayed post-tests. The L2 think-aloud protocol appeared to have created an additional cognitive demand on individuals not experienced by dyads, which may have affected task and test performance.

2.2 Studies comparing one-to-one tuition with face-to-face group classes

While little research has compared one-to-one tuition with face-to-face group language classes, the nature of learner-learner and learner-teacher interaction has been investigated from a sociocultural perspective, and findings highlight the potential for learning in each mode. The role of the teacher as expert who can mediate learner

development is key to the notion of scaffolding (Wood, Bruner & Ross), finely-tuned support provided to aid learners' development from their current to potential level within what Vygotsky termed the 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" ("Mind in Society" 86). Such scaffolding may be heuristic (Holton and Clarke) or cooperative (Bickhard), where the expert models or simplifies a task to help the novice complete it, or it may be conceptual (Holton and Clarke) or informational (Bickhard), where the expert imparts new information. Scaffolding is contingent on the teacher's ongoing assessment of the learner's current level, and fades as it is withdrawn over time, with responsibility for task completion moving from the teacher to the learner (van de Pol, Volman & Beishuizen).

Since the mid-1990s the concept of scaffolding has been extended beyond student-teacher interaction to peer interaction. Since language learners have different levels of expertise in different areas of language and language skills, peers can provide scaffolding to mediate each other's development. Through a microgenetic analysis of language produced by a triad of university French learners preparing a presentation, Donato observed scaffolding that included collectively managing aspects of linguistic problems, identifying discrepancies between language produced and the ideal solution, and reducing frustration. Similarly, Ohta identified peer scaffolding in protocols produced by Japanese university learners, in which participation in LREs exposed learners to input and feedback and focussed attention on language choices.

While scaffolding appears, therefore, not to be limited to teacher-learner interaction, research into classroom interaction sequences indicates that teacher-learner talk has other structural qualities that differentiate it from peer interaction. The triadic IRF (Initiation, Response, Feedback) sequence identified by Sinclair & Coulthard in teacher-led group lessons consists of the teacher's initiation of interaction (often a question), a learner response (usually an answer), and teacher feedback (usually confirmation or correction of the answer). This sequence, first observed in group lessons, is also evident in one-to-one tuition (Graesser, Person & Magliano), where two further steps may be added: teacher scaffolding by breaking down the task into smaller parts, doing part of the task for the learner or reminding the learner of some important aspect; and teacher elicitation of learner self-evaluation of comprehension of the concept.

The lack of literature comparing delivery modes creates the need for a closer examination of cognitive processes occurring in self-study learners, such as inner and private speech (Vygotsky, "Mind in Society", "Thought and Language") and self-scaffolding (Bickhard; Holton & Clark; Knouzi *et al*), and how these impact on learning when compared to traditional group classrooms and one-to-one contexts. The present study, then, aimed to address the following research question: *How do learning outcomes differ when the same task is completed by learner-learner dyads within group classes, learner-teacher dyads in one-to-one classes, and individuals working alone in online self-study?*

3. Methodology

3.1 Participants

Participants were 60 adult L1-Spanish learners (pseudonymised hereon in) studying at a private language school in Spain. They comprised 30 learners in 15 learner-learner dyads in face-to-face group classes, 15 learners in 15 learner-teacher dyads in one-to-one tuition, and 15 self-study learners in the online mode. All participants had a similar level of English, having studied in an upper-intermediate (CEF B2) general English course in their respective modes for the same period, and having achieved marks of between 70% and 90% on the same institutional progress test taken two months prior to the study. Participants were all following the same digital coursebook materials. The group and one-to-one classes were taught by three different teachers, all of whom had similar teaching qualifications and a similar number of years' classroom experience.

Observations of learners in group and one-to-one classes focussed on dyadic interaction only. While group classes typically involve a wider range of interaction, including small groups, individual study and teacher participation, and one-to-one classes typically involve some individual work, the quasi-experimental design of the present study required a narrow observational focus for comparisons to be drawn between modes. Therefore, only dyadic interaction was observed in group and one-to-one contexts.

3.2 Task

All participants completed the same language-focussed passage editing task (Appendix 1) consisting of an email to a university admissions officer written in informal language rather than a more appropriate formal register. Passage-editing tasks have been shown

to draw learners' attention to a range of language forms (Storch) and lead to discussions and reflections on language choices and hypothesis testing (García Mayo). The passage was seeded with errors and inappropriacies relating to forms studied in the course.

Participants in learner-learner dyads in group classes and learner-teacher dyads in one-to-one tuition talked together to complete the task, and were audio recorded. Online self-study participants completed the task alone, thinking aloud, and audio recorded themselves. Online learners saw a video model of a think-aloud protocol prior to the task. It should be noted here that the use of think-aloud protocols has been argued to be inconsistent with a Vygotskian sociocultural research framework, as think-alouds have the potential to alter the same cognitive processes they aim to observe (Smagorinsky). If, as Vygotsky ("Thinking and Speech") proposed, talking about language mediates the internalization of knowledge, then the act of verbalising itself alters cognition. Despite this potential limitation of "reactivity" (Ellis; Jourdenais), the main alternative for data collection from individual learners is stimulated recall, in which participants watch a video or hear a recording of themselves completing the task and describe what they were thinking. Given that stimulated recall itself is subject to the limitation of memory decay (Bowles), an erosion over time of participants' ability to accurately verbalize what they were thinking, a think-aloud protocol was chosen as the preferred data collection instrument in the present study.

3.3 Post-test

One week after the task, all learners individually completed a post-test consisting of an isomorphic passage editing task (Appendix 2), similar to the original task, and requiring learners to correct the same number and type of language items. The use of an isomorphic post-test was 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.

3.4 Data analysis

Learner talk was transcribed and LREs were identified, following Swain ("Focus on Form"), as any instance where learners talked about the language they were producing or self-or other-corrected. Learning within those LREs was then identified in two ways: firstly, by observing instances of microgenetic development (MD) – that is, learning

observable within the short time taken for learners to complete the task; and secondly, by examining post-test responses.

Regarding MD, instances were identified where, based on a qualitative analysis of the protocol alone (i.e. without consulting the post-test), there was evidence of change in one or both of the participants' language knowledge within the duration of the task. To be coded MD, some indication of uptake was required, 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, one-to-one learner Ofelia and her teacher languaged the construction "looking forward to" + gerund. Within the episode itself there were only phatic responses by the learner, so no MD was observed:

Ofelia	OK… to study without the ING 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 task there was 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 evidenced uptake, so the episode was coded as demonstrating MD.

3.5 Quantitative analytical methods

Data for the dependent variables (numbers of LREs; instances of MD; test scores) were tested for normalcy of distribution. Where data appeared normally distributed, one-

way ANOVAs determined whether mean responses differed at the $p < .05$ significance level. Where data did not appear normally distributed, a Kruskal-Wallis H test was performed instead of ANOVA. Where the ANOVA or Kruskal- Wallis test indicated a significant difference at the $p < .05$ level, unpaired *t*-tests (for normally distributed data) or Mann-Whitney U tests (for non-normally distributed data) determined whether differences between pairs of modes (group - one-to-one; group - self-study; one-to-one - self-study) were significant. 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 *a*/*m*, that is the alpha level (.05) divided by the number of hypotheses (two), resulting in and alpha level of .025.

4. Results and discussion

4.1 Numbers of LREs

Table 1 presents numbers of LREs observed in group, one-to-one and self-study modes.

Table 1

Number of LREs in group, one-to-one and self-study modes

	LREs	M	SD
Group (n = 15)	406	27.1	7.9
One-to-one (n = 15)	359	23.9	8.7
Self-study (n = 15)	235	15.7	4.4

A one-way ANOVA indicated a significant difference between modes in LRE numbers at the $p < .05$ level, $F(2, 42) = 9.04$, $p = .00054$. Post-hoc comparisons using independent-samples *t*-tests revealed a significantly higher number of LREs at the $p < .025$ level in group than self-study, $t\ (28) = 4.48$, $p = .00012$, a significantly higher number in one-to-one than self-study, $t\ (28) = 3.04$, $p = .0050$, but no significant difference between group and one-to-one, $t\ (28) = 1.03$, $p = .31$. Therefore, significantly fewer LREs occurred in self-study than group and one-to-one modes.

4.2 Microgenetic development (MD)

Table 2 presents instances of microgenetic development (MD) observed in group, one-to-one and self-study modes.

Table 2

Instances of MD in group, one-to-one and self-study modes

	Instances of MD	M	SD
Group (n = 15)	16	1.1	1.2
One-to-one (n = 15)	40	2.7	2.1
Self-study (n = 15)	1	0.1	0.3

A Kruskal-Wallis H test revealed a significant difference in the instances of MD observed at the $p < .05$ level, $x^2(2) = 14.03$, $p = .00090$. Post-hoc comparison using the Mann-Whitney U-test revealed significantly more instances of MD at the $p < .025$ level in group than self-study, U(28) = 50, z = 2.57, $p = .010$, significantly more in one-to-one than self-study, U(28) = 33, z = 3.28, $p = .0010$, but no significant difference between group and one-to-one U(28) = 66, z = 1.91, $p = .056$.

Significantly less microgenetic development occurred in self-study, then, than in group or one-to-one modes. While the difference between one-to-one instances of MD (40) and group instances (16) did not quite reach significance, MD still appears most closely related to one-to-one interaction. The qualitative analysis of teacher-leaner talk revealed MD in one-to-one to be frequently evident in learner uptake following a correction by the teacher. In the following extract, 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 MD – and confirmed that this word was new for him. The evidence of MD began when he checked the spelling of the new word, which he now wished to use, and continued in all subsequent utterances where he used the new word rather than the originally preferred "budget". He then sought to build upon his understanding by seeking syntactic information regarding the appropriate preposition, "a quote for", 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… 'Cause 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…

MD in one-to-one appeared to be more visible than in learner-learner interaction because the teacher made it visible by eliciting and checking understanding in ways that students working together did not. MD was still evident in peer interaction, but to a lesser extent, and frequently co-occurred with peer scaffolding. In the following extract, for example, Gema collaborated with Georgina to support Georgina's understanding of the past form 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 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. Georgina's confirmation of the correct answer in this analogous example was evidence of MD:

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

If, as the data suggest, observable MD is associated with uptake following correction or scaffolded input by a teacher or peer, then it is unsurprising that there were almost no instances of observable MD in the self-study mode, as there was no interlocutor. The only instance of MD in self-study occurred in Saul’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:

> “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 . . .

Saul’s strategy of drawing on existing knowledge to help resolve a new problem is an example of self-scaffolding. Saul interrogated himself about what he did not understand, then resolved the episode through self-explanation in a process of further interrogation (Holton & Clark). Saul self-scaffolded heuristically by making optimal use of available resources (Bickhard), in this case his knowledge of analogous forms.

4.3 Post-test responses

All learners individually completed a post-test consisting of an isomorphic task (Appendix 2) that drew attention to the same number and type of language items as the original task. The open-ended nature of the post-test meant that learners could attempt as few or as many corrections as they wished. Some corrections attempted were of forms that had been discussed in LREs during the original task, while other

corrections attempted were of forms not discussed. Table 3 presents the numbers of test items attempted by participants, and also expresses this number as a percentage of test items that corresponded to participants' LREs in the original task:

Table 3

Post-test items attempted in group, one-to-one and self-study modes

	Test items that corresponded to LREs in the original task	Test items attempted	Items attempted as a percentage of items that corresponded to LREs
Group (n = 30)	614	249	41%
One-to-one (n = 15)	287	160	56%
Self-study (n = 15)	201	103	51%

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, $x^2(2) = 9.22$, $p = .01$. 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 self-study learners than group learners, $U(43) = 129.5$, $z = 2.29$, $p = .022$, but no significant difference between one-to-one and self-study, $U(28) = 105.5$, $z = 0.27$, $p = .79$.

Learners across the modes, then, generally attempted around half of the test items that corresponded to their LREs, but a significantly higher proportion was attempted by one-to-one and self-study learners than group learners. This suggests that participants found forms 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 dyads in group classes. This may support Swain's observation that in peer interaction, not all talk is 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" ("Inseparability"). Self-directed speech refers to Vygtosky's" concept of private speech ("Thinking and 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 following extract, German vocalises a series of language problems but resolves these himself. His speech does not appear socially directed. German follows his own agenda in order to complete the task:

German	Erm, this idea… "but apart from the studies, time for making leisure activities is also a priority for me" 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 "this is important, whereas"
Guillermina	Erm we could erm talk er we could say that erm, we
German	Time for make
Guillermina	Yes
German	Making
Guillermina	We?
German	Time for making leisures activities
Guillermina	ah OK, or
German	Or OK

Post-test items attempted were further categorised as resolved in agreement with the original LRE resolution, or in disagreement with the LRE resolution. Table 4 presents these data, also expressed as percentages of items attempted:

Table 4

Post-test items corrected in agreement or disagreement 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
Self-study (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
Self-study (n = 15)	103	4	3.9%	0.3

Kruskal-Wallis H tests revealed no significant differences at the $p < .05$ level between modes in proportions of test items resolved in agreement with LRE resolution, $x^2(2) = 2.08$, $p = .35$, and in disagreement with LRE resolution, $x^2(2) = 4.71$, $p = .095$.

Between 71% (in self-study) and 78% (in one-to-one) of test items attempted were resolved in agreement with the LRE resolution. This suggests associations between LREs and learning, with new knowledge constructed or existing knowledge consolidated in the LRE surfacing again on the isomorphic post-test. In the following

extract, Ofelia initiated an LRE regarding “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 related to knowledge constructed or consolidated 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. The test response therefore suggested that consolidation of knowledge had occurred.

Relatively few test items were resolved in disagreement with LRE resolution in the task: just 4% in self-study, 13% in one-to-one and 15% in group. This suggests that in all modes 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 was for self-study learners, and the highest for group learners. As discussed above, even when LREs had been resolved a certain way, group learners may have been silently following their own agenda, which sometimes only became apparent in the post-test. Group learner Grisela, for example, 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 with her partner Gulaterio. In the following task excerpt, Grisela 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 utlilzar palabras más, más palabras porque*
	[but we need to use words that are more, more words because]
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".

5. Conclusion

Before drawing conclusions and making pedagogical recommendations, it should first be noted that the present study was subject to a number of limitations. Firstly, that the post-test was isomorphic meant by definition that it was very similar to the task. One possible consequence of this 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). Furthermore, performance on isomorphic items provides no guarantee that learners can extend the application of resolution to non-isomorphic problems. It is also important to reiterate the potential for the think-aloud protocol carried out by self-study learners to be reactive to the task at hand, by adding a cognitive demand not experienced by the other participants.

To conclude, the present study set out to compare the learning, in terms of in-task microgenetic development and ability to recall forms on a post-test, that occurs in group, one-to-one and asynchronous online EFL contexts. Results indicate that the highest number of instances of microgenetic development occurred 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 MD evidenced by learner uptake of correct forms. MD was also evident, albeit to a lesser extent, in pair-work within group classes, as was peer support. While there was little evidence of self-scaffolding and MD in self-study, 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 self-study learners suggests that languaging

is more strongly associated with subsequent language awareness when it occurs in self-study or with a teacher. Self-directed speech sometimes observed in learner-learner dyads in group mode, in which learners followed their own agenda, points towards 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 suggests associations 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.

That greater MD occurred in one-to-one tuition 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. One-to-one LRE resolutions often followed carefully structured support – scaffolding – in the form of elicitations and prompts, contingent on learners' current knowledge as perceived by the teacher as 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 the approach of guiding learners towards their own resolutions, rather than teachers resolving episodes for the learner. This suggests that an inductive guided discovery approach is beneficial for learning.

Regarding pedagogical recommendations, the present findings suggest that if group learners could be encouraged to create gaps for their peers, and take responsibility for others' learning as well as their own, group classrooms may be better able to better approximate one-to-one outcomes. It is unrealistic, of course, to expect learners to provide peers with the same kind of support that teachers provide: peer language is often characterised by inconsistencies, interlanguage and a reduced ability to reformulate forms (Philp *et al*), meaning 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 teachers could provide learners 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. An interesting avenue for future research would be

the ongoing observation of learner development in classrooms in which such a pedagogy is promoted.

Given the significantly lower numbers of LREs and instances of MD observed in self-study, the presence of an interlocutor appears to be associated with languaging and learning. If financial constraints make it difficult for self-study learners to obtain tutorial support, seeking out other online learners of English with whom to interact could be beneficial, as languaging and development of language awareness has also been demonstrated here to occur in learner-learner dyads.

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Appendix 1: 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 2: 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