A Classroom Application of Concept-Based Language Instruction (C-BLI)

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Abstract

This study reports on an investigation of the potential of Concept Based Language Instruction (C-BLI) for enhancing EFL learners' understanding of the concept of tense/aspect in English and their use of associated forms; past simple, past continuous and present perfect. C-BLI was compared to a grammar presentation approach based on the Presentation-Practice-Production (PPP) model. Participants included 45 adult learners of L2 English from an Algerian University. Drawing on a pre-, post-, delayed post-test research design the study revealed the effectiveness of C-BLI over PPP for improving the participants' understanding of the concept of tense/aspect as well as their use of the three target forms.

Keywords: Concept Based Language Instruction; C-BLI; Sociocultural theory; tense/aspect

Introduction

The main aim of this study was to investigate the potential of Concept Based Language Instruction (henceforth C-BLI) for helping students better understand the concept of tense and aspect in English. This pedagogical approach is rooted in the Vygotskian notion of praxis which emphasises the dialectical relationship between theory and practice as being at the forefront of pedagogical endeavour. C-BLI is, in turn, based on Gal'perin model of (1969) Systemic Theoretical Instruction or 'stepwise formation of mental actions' (Gal'perin

1969; Arievitch and Haenen 2005; Lantolf and Poehner 2014: 64–68) and represents a promising pedagogical model with respect to L2 metalinguistic knowledge and language use, see below for details. Much is still unknown, however, with regard to how C-BLI compares to other pedagogical models.

The linguistic focus of this study is the English tense/aspect system as it represents a major problematic area for L2 learners. More specifically, it is well documented that L2 users of English have difficulties in understanding the relationships between grammatical forms such as simple past, past continuous and present perfect and the nuanced aspectual meanings they convey (see Larsen-Freeman and Celce-Murcia, 2016). Therefore, this study had two objectives: First, to assess the effectiveness of C-BLI for improving L2 learners' understanding of tense and aspect at a metalinguistic level and their use of the aforementioned tense/aspect markers in English. Second, to compare C-BLI with the Presentation-Practice-Production model (PPP).

Theoretical Background

The role that grammar teaching in general, and the effectiveness of specific approaches to grammar teaching in particular, play in language classrooms has been the subject of debate for decades. Various teaching approaches and methods have been at the centre of such debates, e.g., the early Grammar-Translation Method with its explicit and detailed analysis of grammar rules and vocabulary as well as contrasting pedagogies that reject such techniques, e.g., the Direct Method and communicative language teaching (CLT) (Richards and Rodgers, 1986). A unifying characteristic of such approaches according to Negueruela (2003: 44) is the 'lack a theory of language that is able to explain communication in a more meaning-based conceptual fashion', for example by making explicit the functional relationships between form and meaning. C-BLI represents an alternative that aims to help

learners internalise such relationships as a means to enable effective communicative activity (see also Negueruela and Lantolf, 2006).

C-BLI or Systemic Theoretical Instruction, as originally conceptualised by Gal'perin (1992), is rooted in Vygotskian thought. Vygotsky (1987) argued that the formation of human consciousness depends on the dialectical unity of human biology, the brain and the body, and the social environment. The development of higher order mental functions, e.g., voluntary attention, memory, and problem-solving, does not solely depend on the biological maturation of the brain but develops as a consequence of participation in culturally mediated activities (Lantolf and Zhang, 2017). In other words, humans, unlike other species, have the ability to control their cognitive processes by appropriating stimuli from participation in the social environment, e.g., formal education, and using them as psychological tools to regulate their mental functioning (Lantolf and Poehner, 2014).

Importantly, the type of knowledge introduced through formal education is different from the type of knowledge acquired in everyday life. In educational settings human behaviour is mediated by scientific concepts (derived from knowledge based on rigorous analysis of the object of study). In contrast, in the non-school context human behaviour tends to rely on spontaneous concepts, which are generalized from everyday life experience and therefore tend to be unsystematic and incomplete (Karpov, 2018). Both types of concepts are essential in order to maximize human development. A key role of formal education is to help learners make connections between both; for example, by engaging learners in organized instruction that links scientific concepts to goal-directed practical activities. If scientific concepts are not linked to practical activities, they will be difficult to use because they will lack the personal experience needed to recreate a sense of reality. Furthermore, if practical activity is not guided by scientific concepts, the possibility of transfer into other contexts will be limited (Lantolf, 2008).

C-BLI thus aims to promote development through concept formation. This is achieved by combining the use of both physical and psychological tools. As Lantolf and Poehner (2014) explain, by materializing the target concept, e.g., through diagrams, charts, drawings, etc. rather than simply providing a verbal definition, educators can promote the appropriation of the concepts through understanding as opposed to 'memorization without understanding' (p. 65).

Turning more specifically to the L2 learning context, a key pedagogical goal of C-BLI is to ultimately help learners make use of their understanding of language in order to become successful users of that language. In other words, it is crucial for learners to be able to internalize the target concepts as a means to succeed in communication. To that aim C-BLI is based on three general principles that guide its implementation (see Garcia, 2018).

The first principle involves the development of an appropriate pedagogical unit based on the target concept. As mentioned above, in order to help learners understand the target concept, it has to be materialized by making use of models, diagrams, pictures, or other non-linguistic representations (Lantolf, 2011; Lantolf and Poehner, 2014). The second principle involves verbalization. According to Negueruela and Lantolf (2006) verbalization frees learners from the immediate concrete experience brought about through the materialized concept and helps learners move from the controlled material plane towards an increasingly functional understanding of the concept. Gal´perin (1969) proposed two phases of verbal action, *communicated thinking* where learners engage in collaborative dialogue to explain to others their understanding of the concept and *dialogic thinking* which encourages learners to speak to themselves, to self-explain, their understanding of what they are doing while using the concept (Haenen, 2001, see also Lantolf and Poehner, 2014). The third principle represents the culmination of the pedagogical endeavour and is conceived of as the transformation of overt speech into inner speech through internalization of the target concept.

The success of such a process in the case of L2 learning is manifested in the learner's ability to use the relevant concepts, and related forms, for cognitive and communicative purposes (Negueruela, 2003). In other words, C-BLI proposes a relationship between communicative performance and conceptual knowledge.

To date, research into C-BLI has demonstrated its potential in relation to a wide range of language features including verbal aspect, mood, and modality in Spanish (Negueruela, 2003; 2008); the concept of voice in French (Knouzi et al. 2010; Lapkin et al. 2008; Swain et al. 2009); tense and aspect in English (Gánem-Gutiérrez and Harun, 2011; Negrete Cetina, 2019; Poehner and Infante, 2017) and Spanish (Gánem-Gutiérrez, 2016; Yáñez-Prieto, 2008); English verb + noun collocations (Lantolf and Tsai, 2018); English sarcasm (Kim and Lantolf, 2018); L2 pragmatics (van Compernolle, 2014); as well as for language teacher education (Esteve, 2018). This research suggests that the kind of internalization of language promoted by C-BLI might indeed be qualitatively different from the type of learning which encourages memorization of pedagogical grammar rules, for example.

Methodologically, most research into C-BLI has favoured the genetic method, e.g., microgenetic analysis, as the analytical framework intrinsic to Vygotskian thought (Lantolf and Thorne, 2006) to meticulously document changes in L2 performance over relatively short time spans. This type of analysis has sometimes been accompanied by descriptive statistics in order to better contextualise the findings presented (e.g., Kuepper and Feryok, 2019; Lantolf and Tsai, 2018). We would like to argue, however, that as well as observing and documenting the genesis of development, it is also necessary to get a sense of the potential of C-BLI with regard to learner ability to recontextualize their knowledge and ability beyond the immediate framework of a given study. Furthermore, we need to assess its effectiveness compared to alternative pedagogical approaches as shown in two recent studies.

Negrete Cetina (2019) compared C-BLI to PPP for helping L1 Spanish speakers understand and use aspectual distinctions as marked by simple past, past continuous and present perfect in English. Her participants were 50 teacher trainees at a Mexican university; findings based on inferential statistics suggest that C-BLI was indeed more effective than PPP at least for promoting metalinguistic understanding of the target concepts. A second, large-scale (N = 103) experimental design was conducted by van Compernolle (2018), who compared C-BLI to rule-based instruction for teaching the sociopragmatics of an artificial language. He reported that while no statistically significant differences were found between the contrasting interventions with regard to performance, qualitative data revealed that C-BLI helped participants develop their understanding of language and social relationships in a way that the rule-based group did not.

C-BLI thus represents a promising model for helping students gain a deeper understanding of linguistic concepts and, ultimately, develop their use of the L2. Whilst the last two decades of research have provided rich developmental accounts primarily at descriptive and microgenetic levels, we argue that further, comparative, and potentially more generalisable, studies are necessary. We will now provide an overview of the language feature at the centre of our study before highlighting some of the reasons behind the challenges that aspectual distinctions pose for L2 learners in general and L1 Arabic speakers in particular.

Tense-aspect marking as a target feature

Fully mastering the tense-aspect system is notoriously challenging for L2 learners of English even at advanced levels of proficiency and, therefore, it represents an important area to attend to from a pedagogical point of view (Garret, 1986). Understanding conceptual distinctions between tense and aspect is key for L2 users of English to appropriately communicate the nuanced meanings conveyed by specific form-meaning mappings (Larsen-Freeman and Celce-Murcia, 2016). In what follows, we provide a necessarily brief account of

key tense-aspect issues pertaining to both English and Arabic in order to contextualise the grammatical focus of this study.

Tense refers to the grammatical tool that enables a speaker to locate, select, or highlight a time span which is relevant for what they want to say (Niemeier and Reif, 2008) while aspect is defined as 'a way of viewing the internal temporal constituency of a situation' (Comrie, 1976: 3). From a Cognitive Linguistics perspective, tense relates to the representation of a situation in the speaker's and hearer's mental space where the relationships between tense, as a grammatical tool, and time are anchored (Fauconnier, 1998). This mental space includes both speech time (moment of speaking) and event time (time of event occurrence) as well as the viewpoint (aspect) from which speakers can 'see' the situation they are referring to (Radden and Dirven, 2007).

English speakers mark the internal structure of an action morphologically by means of progressive and non-progressive forms. The progressive is expressed by the verb + *ing*, whereas, the non-progressive is expressed by the simple verb form. In the progressive aspect the situation is viewed as continuous or ongoing (unbounded). In contrast, the non-progressive conceptualises the event as completed or bounded (Radden and Dirven, 2007). Langacker (2000) sees the presence of the +*ing* form, the progressive, as a way for speakers to zoom in on the situation making it lose sight of its contour; therefore, there is an exclusion of the situation endpoints. The absence of the +*ing* form, on the other hand, allows speakers to zoom out from the event thus conceptualising it as a bounded event where the entire contour of the situation fits within a speaker's (conceptualiser) visual scope.

The present perfect allows speakers to express a relation between two-time points, the reference time and the event time and thus depicts a situation or period in the past that is inclusive of the present and the past. The present perfect thus holds three main properties: Focus on the present time (expressed by the auxiliary *have*), relevance of a past situation, and

indefiniteness or the non-specification of time (Radden and Dirven, 2007). Speaker choice of present perfect can convey various meanings; for example, showing that the situation in focus begins in the past and extends to include the present or describing past events where a speaker sees the actual time of occurrence as unimportant. In this case, the speaker is instead focusing on the event within the experience of the event participants. Accomplishment verbs for instance 'to jog' and achievement verbs such as 'to win' are used with a perfect aspect to convey prior events that are completed. In this case, the perfect aspect is often used for recent events since it is their very recency which provides the connection with the present (Huddleston, 1984).

Turning to Arabic, according to Ryding (2014: 54) 'tense and aspect seem to be interwoven in Arabic verbs.' The perfective is used to indicate perfective as well as past time reference with the Arabic past tense conveying both a completed action or an action in the past thus comparing to the English past tense and past perfect (see Mudhsh, 2021; Ryding, 2005). The verb can take two forms to convey temporal and aspectual distinctions. The perfective, *al-maaDii* الماضي, refers to completed actions in the past and it is thus the equivalent of the English simple past tense or past perfect depending on the context (Ryding, 2005). Example:

سلموا بيانا.

sallam-uu bayaan-an

They (masculine) delivered a statement

The imperfect, *al-muDaari* المضارع, conveys incomplete, ongoing actions or states. It corresponds to the English simple present or present continuous depending on the context as well (Ryding, 2005) because 'Arabic does not distinguish between present tense and progressive aspect' (Mudhsh, 2021: 11). Example:

اكتبُ

ᵓa-ktub-u

I write; I am writing

The Arabic tense/aspect system signals proximity by adding a prefix and a suffix to the bare verb (imperfective) and distance by adding a suffix (perfective). The verb in Arabic agrees with the subject in gender, number, person, tense, mood, and voice. It is also believed that aspectual distinctions in Arabic are more prominent than tense distinctions, for further details refer to Ryding (2005, 2014).

According to Ryding (2005), like English, Arabic verbs can be accompanied by auxiliary verbs such as *qad, laqad* and *kaana* to express variations in tense and aspect. For instance, when *kaana* is used with a verb in the imperfect, it expresses continued or habitual action in the past. *Kaana* anchors the event in time and the imperfect conveys the aspectual nature of the action. In the example below *kaan* (past of 'to be') signals the temporality of the event and the imperfect expresses its unboundedness which could be compared to 'used to' or 'was …+ -ing' in English depending on context (Bahloul, 2008), e.g.,

كانت ترتدي قميصا ازرقا.

kaan-at ta-rtadii qamiiS-an ᵓazraq-a

She was wearing a blue shirt

According to Bahloul (2008) *qad* represents an intriguing grammatical particle which can also take the form of *la-qad* and for which there is no exact equivalent in English. *Qad* + the perfect can convey both, either a near- or a far-past action depending on context, e.g.,

قد قمت للصلاة.

qad qamat alsalat.

The prayer has started

Or as in the English past perfect, e.g.,

دخلت وقد قام الناس.

dakhaltu wa qad nama alnasu.

I came in when everyone had slept

Therefore, *qad* can describe definite actions in the past (past perfect) or past actions that relate to the present (present perfect).

Table 1, adapted from Mudhsh (2021), summarises similarities and differences between Arabic and English tense and aspect that are relevant to this study.

Table 1: Arabic – English contrasts

Arabic	English
Similarities	
Arabic past tense refers to completed action in the past (Ryding, 2005).	English past tense refers to completed action in the past (Ryding, 2005).
Continuous actions in the past are expressed by the perfective of the verb 'ka:n' followed by imperfective of the main verb (See Comrie, 1976).	Continuous actions in the past are expressed by *was/were* and the main verb marked with *-ing*.
Differences	
'The difference between tense and aspect can be subtle, and the two categories may overlap to a significant extent' (Ryding, 2005: 441).	Tense and aspect are conveyed by different grammatical markers.

The verb in Arabic agrees with its subject in gender, number, person, tense, mood, and voice.	Verbal agreement with its subject is only relevant in certain cases relating to the present tense.
Temporality in Arabic is mostly viewed by aspectual distinctions of perfective category versus imperfective category (Ryding, 2005).	Temporality in English is viewed by various verbal forms to express the various tense and aspect categories (Ryding, 2005).
Arabic perfective is used for both past and past progressive tenses.	English employs an overt distinction between past and past progressive tenses.
In Arabic, aspectual distinctions seem to be more prominent than tense distinctions (Ryding, 2005).	English has been described as a tense language expressed through various verb forms (Ryding, 2005), but see details of tense/aspect distinctions above and in cited work (e.g., Comrie, 1976; Gánem-Gutiérrez and Harun, 2011; Poehner and Infante, 2017).
The Arabic equivalent of present perfect is formed with the particle '*qad*' preceding perfective. It refers to an action that just finished with reference to the moment of speaking.	The present perfect in English expresses various meanings: perfect of result, experiential perfect, perfect of persistent situation and perfect of recent past Comrie (1976).

In conclusion, understanding relationships between form and meaning, for instance simple past, past continuous and present perfect to express temporal and aspectual nuances, represents a challenge for L2 English learners (Larsen-Freeman and Celce-Murcia, 2016), with Arabic native speakers being a case in point (Sabbah, 2015). L1 Arabic learners of English need to master important differences in the tense and aspect system in all respects, form, function and usage. Specific challenges for learners relate to the fact that Arabic conveys temporality through aspectual distinctions between perfective and imperfective

categories. By contrast, English expresses temporality through various verbal tense and aspect categories (Mudhsh, 2021).

The present study

As outlined in the Theoretical Background section, L1 Arabic students of L2 English need help to improve their understanding of tense and aspect and their use of simple past, past progressive and present perfect in English. C-BLI has been shown to be a promising pedagogical approach to grammar teaching including with respect to our focal concept, but research in this area is still limited. Importantly, we know very little about its relative effectiveness compared to other approaches. We aim to contribute towards narrowing this knowledge gap by addressing the following question: Is C-BLI more effective than PPP? More specifically:

What are the immediate and longer-term effects of C-BLI compared to PPP, for improving Algerian learners'

(a) understanding of tense/aspect in English?

(b) accurate use of simple past, past continuous, and present perfect?

Methodology

Participants

The participants in the study were 45 second-year students of English as a foreign language at an Algerian University. They were Arabic native speakers, who also spoke French as a second language; their formal education in French ranged from 11 to 12 years whereas their English education took place for a total of 7 years. English proficiency ranged between intermediate and upper intermediate as determined by the Algerian *Baccalauréat d'Enseignement Secondaire* (BAC). The participants belonged to two intact classes taught by the first author, one received C-BLI intervention (N=25) and one received intervention based

on PPP (N=20) during a semester at the University (see details below). Participation was voluntary and adhered to standard ethical procedures.

Data gathering tools and procedures

Data for this study was collected during 6 sessions (1hr 30 mins each approx.) over a period of three weeks and embedded within the students' regular English course at the University. Appendices A and B show an overview of the data collection procedure. The pedagogical intervention, i.e., tutorials and practice tasks for both groups, C-BLI and PPP, was designed to be as comparable as possible. The participants in the C-BLI group were further divided into two sub-groups, dyads and individuals[1]. All questionnaires and tests (see below) were administered on a group basis under supervised conditions.

Pedagogical intervention:

C-BLI group: Following Lapkin et al. (2008); Knouzi et al. (2010); and Gánem-Gutiérrez (2016) the participants worked with a suite of 50 tutorial cards (see Appendix D for an example). These cards were used during sessions two and three (Appendix A) and combined concept-based explanations and diagrams adapted from various cognitive linguistics sources (Langacker, 1991; Radden and Driven, 2007; Niemier and Reif, 2008; Reif, 2010). An important consideration was to facilitate a semantically grounded understanding of the concept. The design followed an extensive series of stages and revisions. During the three intervention sessions, including the practice session, individuals were asked to verbalise their understanding while working with the materials (dialogic thinking). Similarly, dyads were asked to discuss their understanding (communicated thinking). All materials were written in English, and although no language restrictions for the verbalisation were imposed, the participants mostly verbalised in English with very little use of their L1.

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[1] The purpose of this was to compare dyadic versus individual verbalization; we are not reporting those findings in this paper.

According to Negueruela-Azarola and García (2016), SCT- inspired pedagogical approaches must help learners engage in 'reflective conceptual tasks where they are pushed to discover and find contradictions between their communicative choices and how they make sense of them' (p. 301). Therefore, as part of the treatment and in an effort to continue a rather recent move in C-BLI studies to incorporate practice as part of the pedagogical model, we specifically included five practice exercises. For instance, one exercise asked learners to discuss the veracity of statements such as 'When using the v + *ing* the speaker is "zooming in" on the situation.' Another exercise prioritised attention to form (Robinson et al., 2012) by asking learners to match sentences with diagrams thus aiming to activate the use of conceptual knowledge promoted on the tutorial cards (see Appendix E).

PPP group: This group received the same amount of input and included explanations and practice tasks as for C-BLI, but following the general principles of PPP (see Richards and Rodgers, 2001). For example, the grammatical input was based on discrete, pedagogical grammar rules taken from sources such as Cowan (2008) and Murphy (1994). Grammar presentation was followed by controlled practice exercises and, subsequently, freer production tasks (Ur, 1988). For instance, one of the exercises followed a rather mechanical approach where students had to rephrase sentences based on the presence of either 'for' or 'since' and which needed a change in verb tense. Other exercises were designed to help learners focus on meaning and the relationship between meaning and form by highlighting the aspectual distinction marked by the target features, i.e., simple past, past continuous, and present perfect (Appendices F and G show examples).

Personal background questionnaire: This questionnaire was administered in session 1 and consisted of twelve questions on educational and language learning background.

Metalinguistic knowledge tests (MLK): These pre-test, immediate post-test and three-week delayed post-tests were administered in sessions 1, 5, and 6 respectively (see Appendices A and B); the three tests were identical and were designed to assess the participants' understanding of the concept of tense and aspect in English. The test was adapted from Gánem-Gutiérrez (2016) and Harun (2013) and consisted of eight open-ended questions in two sections, A and B. The maximum possible score was 24 points. The full test, scoring key and scheme can be found in Appendix H.

The scoring scheme for section A was adapted from Roehr (2008) and ranged from 0 to 3 points to assess the level of accuracy and sophistication of answers. For example, when asked to explain what *aspect* refers to, a student who replied 'Aspect is the part or element or a specific feature of something' received 0 points while a student who replied 'Aspect is the grammatical form in which the speaker views the events as a whole or part from it, and there are two types: we have progressive (continuous)/non-progressive (simple) and perfect' received a score of 3 for that item. In section B, students were asked to analyse four pairs of sentences in order to explain a form meaning contrast, e.g. 'Have you read the book I gave you?' vs 'Did you read the book I gave you?'[2]. This section was scored dichotomously, i.e., with one point given for each correct explanation.

Given the fact that scoring for this test involved a degree of qualitative judgement two raters independently scored the tests. Inter-rater reliability was calculated using Cohen's kappa (κ) (Multon and Coleman, 2018; Syed and Nelson, 2015). Kappa yielded .56 (95% CI, $p< .001$) with 60.7% of agreement. According to Landis and Koch (1977), a Kappa value of (.56) indicates a moderate level of agreement between the scorers. All disagreements were resolved through discussion and consensus between the raters.

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[2] We note an observation made by a reviewer of this paper who pointed out that in most American dialects these forms are more or less synonymous with a preference for the 'did' form.

Language in Use tests (LU Test): In order to assess the participants' use of the target forms two gap-filling tests were adapted from IELTS 2011 reading test passage 3 (*Travel Books)* and IELTS 2007 reading test passage 3 (*The Fruit Book*). The pre-test (session 1) and the immediate post-tests (session 5) were identical; the three-week delayed post-test (session 6) was a matched test. Each test consisted of 20 gaps, 15 were target features and five distractors. The test was scored dichotomously based on a prepared answer sheet; one point was given for each correct answer. The maximum possible score was, therefore, 20 (see Appendix C).

Assumptions regarding normality of distribution (Shapiro-Wilk's test) and homogeneity of variance (Levene's test) for the use of parametric statistics were met by the data from the MLK and LU tests. Therefore, we used repeated-measures analyses of variance to answer the research questions.

Results

A mixed between-within subjects design ANOVA based on percentage scores of the MLK and LU tests was carried out to assess the impact of the contrasting pedagogical interventions (C-BLI vs PPP) on the participants' understanding of the concept of tense/ aspect on the one hand, and the use of the target features, on the other. As mentioned above, assumptions regarding normality of distribution (Shapiro-Wilk's test) and homogeneity of variance (Levene's test) were met. The Mauchly's sphericity test showed no violation within the repeated measures (time), ($\chi^2(2) = .89$, p>.05) nor within the interaction of time with the measures (MLK and LU tests), ($\chi^2(2) = .97$, p>.05); therefore, no correction was applied (see Field, 2009). The alpha value for all tests was set at .05.

Table 1: Descriptive statistics (MLK test and LU test)

	Pre	Post	Delayed
Group	*M (SD) %*	*M (SD) %*	*M (SD) %*
C-BLI (N= 25)	17.5 (9.47)	34.5 (11.31)	29 (7.46)
PPP (N= 20)	14.17 (6.68)	20.63 (8.05)	17.71 (8.42)
	Pre	Post	Delayed
Group	*M (SD) %*	*M (SD) %*	*M (SD) %*
C-BLI (N= 25)	35.2 (12.11)	40 (13.46)	49 (9.9)
PPP (N= 20)	32.5 (11.29)	35.75 (8.62)	35.75 (14.35)

We will now report the results comparing the potential of the two pedagogical interventions for understanding the concepts at a metalinguistic level on the one hand, and improving the use of the target forms, on the other.

Understanding tense and aspect in English: C-BLI versus PPP

In order to test the treatment effect across time apparent in Figure 1 (see also Table 1), an ANOVA was conducted (see Appendix I). This revealed a significant main effect for the C-BLI group, F (2, 48) = 29.01, p< .001, η_p^2= .55, but not for the PPP group. This effect size (.55) is regarded as large for the eta measure (Cohen, 1988). Therefore, gains made by the C-BLI group for the pre, post and delayed post-tests were analysed in pairs (with Bonferroni adjustment). There were significant differences between the results of the pre-test and the immediate post-test, and between the pre-test and the delayed post-test. However, there was no significant difference between the immediate post-test and the delayed post-test (see Appendix K). In sum, the results indicate that not only did C-BLI help the participants

improve their conceptual understanding, but the improvement was sustained after three weeks, albeit slightly reduced.
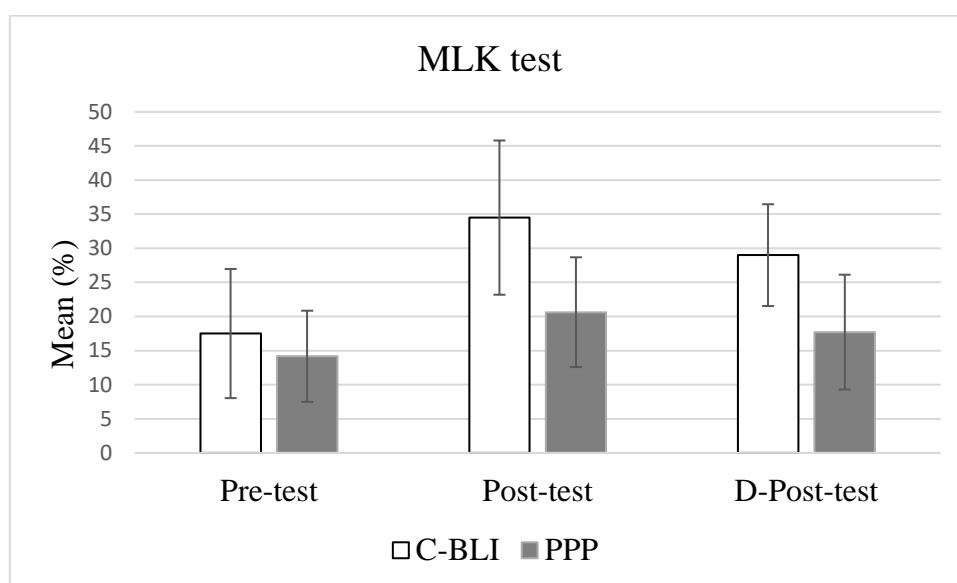

Figure 1: Group comparisons for the MLK test.

Furthermore, the results of post-hoc independent sample *t*-tests comparing groups (see Appendix L) corroborated what can be seen visually in Figure 1; that is, that C-BLI intervention was more effective than PPP intervention for improving understanding of the target concept. The results confirmed that the difference between the two groups at the pre-test stage was not significant while differences between the two groups were significant with high effect sizes regarding both the immediate (Cohen's d = 1.413) and three-week delayed (Cohen's d = 1.419) post-tests.

Using past simple, past continuous and present perfect: C-BLI versus PPP

Following the descriptive statistics shown in Table 1 and illustrated in Figure 2, a mixed between-within subjects ANOVA was used to assess the effect of C-BLI vs PPP for improving the participants' accurate use of the target forms as determined by the LU test. The results revealed a significant main effect for the C-BLI group $F_{(2, 48)} = 9.74$, p< .001, $\eta_p^2=$

.29 (again considered high for the eta measure), but no significant main effect for the PPP group (see Appendix M).
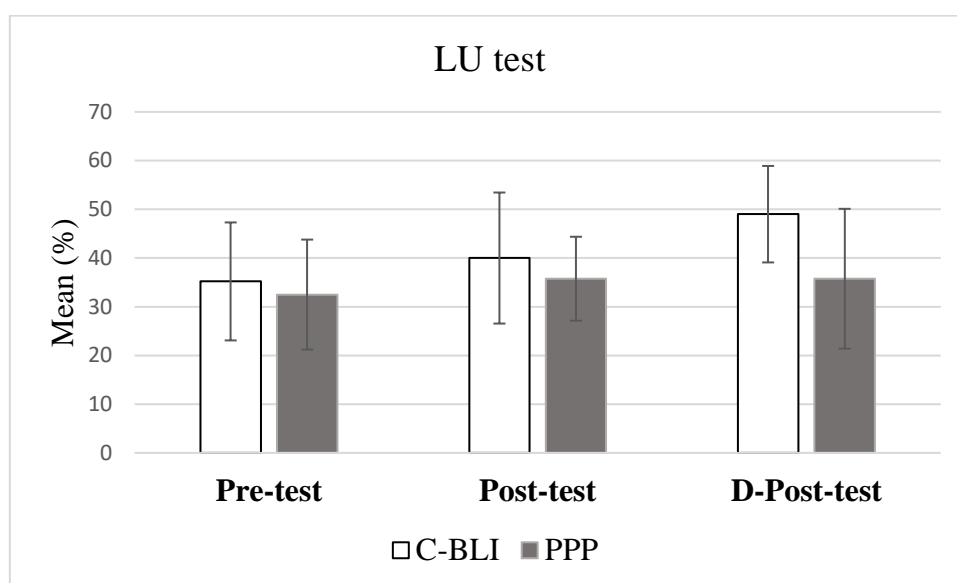

Figure 2: Group comparisons for the LU test

Given the above, the results for the C-BLI group were further analysed by means of an ANOVA paired comparison for the pre-test, immediate post-test and the delayed post-test (see Appendix N). The analysis revealed no statistical difference between the pre-test and the immediate post-test nor between the post-test and the delayed post-test. However, the comparison between the pre-test and the delayed post-test revealed a significant difference ($p < .003$) which suggests the positive effects of the C-BLI treatment on accurate use of the target forms were only shown three weeks after intervention (in contrast with MLK above).

Further results of a post-hoc independent sample *t*-test confirmed that C-BLI was more effective than PPP for helping learners use the target forms more accurately ($p < .003$), but this difference was only shown three weeks after intervention (with high effect size: Cohen's d = 1.07), see Discussion below. Appendix O shows details of the statistical test results.

Discussion

Overall, findings from the study suggest that C-BLI intervention was more effective than PPP for both helping learners improve their understanding of the concept of tense/ aspect as well as for helping students accurately use the grammatical forms associated to the target concept. Importantly, not only did the C-BLI group improve in both respects after treatment, but the learners were able to sustain their knowledge in the longer term, i.e., three weeks after intervention.

More specifically, the study revealed that the participants in the C-BLI group were able to improve and sustain their understanding of the target concept. On the contrary, the participants in the PPP group were not, which supports the view that 'learning a second language under properly organized instructional conditions is a different process from learning it under other circumstances' (Lantolf, 2008: 37). From a SCT perspective, when instruction is based on simplistic and/or incomplete grammatical explanations, as it tends to be the case in many traditional grammar classrooms, most learners would be unable to form a deep understanding of the target grammatical concepts. However, when instruction draws on appropriate theory and is organized around scientific concepts, in the Vygotskyan sense, L2 development can occur (see also Arievitch and Stetsenko, 2000).

Lantolf (2008) also argued that although many researchers point out the importance of explicit grammatical knowledge in L2 instruction, few have investigated the quality of this explicit knowledge. As further evidence of the importance of the quality of explicit grammatical knowledge in helping learners develop their conceptual understanding, we would like to highlight some observations from the data of one participant from the C-BLI group, Ann (pseudonym). For instance, when Ann was asked to define the concept of aspect in the pre-test her answer was 'aspect is the part or element or a specific feature of something.' In the immediate post-test, however, Ann's answer changed considerably: 'Aspect is the

grammatical form in which the speaker views the event as a whole or part from it and there are two types: we have progressive (continuous)/ non-progressive (simple) and perfect.' She appears to have been able to integrate the linguistic and visual explanations provided in the C-BLI materials (see examples in Appendix D) and thus provide a more accurate, and contextually appropriate, explanation of aspect. Our example resonates with similar observations reported in Poehner and Infante (2017). Their study provides further evidence that targeted mediation using pedagogic tools based on the same principles as ours, also rendered developmental changes with respect to tense and aspect.

Interestingly, given that no further work on tense and aspect was done in the classroom between the post-test and the three-week delayed post-test, Ann's answer in the latter was slightly more elaborated:

'Aspect is the grammatical quality of a verb which determines the relationship of the speaker to the event or the verb that is described and also the speaker views from the outside as a whole…etc. We have two aspects in English we have the perfect and progressive and nonprogressive.'

Her answer also incorporated further grammatical explanations provided in the materials and she seems to be able to realize that aspect has to do with the relationship that exists between the speaker and a situation or event. Ann used the word 'quality', as in feature, in 'grammatical quality of the verb' instead of 'grammatical form' and incorporates the pronoun 'we.' Her explanation is thus suggestive of a certain shift from 'meaning' into 'sense' from a Vygotskyan perspective (see Lantolf, 2000: 7) and is reminiscent of Negueruela's developmental account where he suggests that 'the choice of words is relevant and revelatory to study L2 learners' conceptual development at specific moments in ontogenesis' (2003: 336). It seems that the three-week period between the immediate and delayed post-testing might have allowed for improvement in understanding of the concept although we cannot rule

out the role that memorisation might have also played. Negueruela (2003) alludes to this matter in his account of the evolution from verbalism (the ability to name scientific concepts, for example) to understanding (where learners are able to use scientific concepts as psychological tools for thinking because such concepts have been internalized).

Findings regarding use of correct forms were surprising and rather difficult to explain. We reported above that there was an observed improvement for the C-BLI group, not the PPP group, but only three weeks after participants worked with the pedagogical materials. We can only tentatively conclude that the type of practice activity the C-BLI group engaged in, as described in the Method section above, might have worked at a deeper level by working on conceptual understanding through verbalization of the explanations and diagrams in the materials. This would also explain that more time, e.g., three weeks, was necessary for deeper knowledge to become usable when transferred to tasks such as gap-filling, which was what the post-tests required. What can be said with some certainty is that systematic, meaningful, communicative practice is necessary for learners to be able to more comfortably and accurately use their L2 (see DeKeyser, 2007; Lightbown, 2019). Through the use of materials, such as the ones advocated by C-BLI, as well as its verbalization phases, knowledge might thus become deeper and more meaningful[3].

Conclusion and Pedagogical Implications

Framed within a sociocultural theory perspective, C-BLI was implemented in an intact foreign language (FL) classroom in order to help learners improve their understanding of the concept of tense/aspect in English as well as to improve their use of simple past, past continuous, and present perfect. Importantly, C-BLI was compared to PPP.

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[3] We thank one of the reviewers for their observations in this respect.

The results of the study indicated that C-BLI was a more effective pedagogical alternative to PPP for helping learners improve and sustain their understanding of the concept as well as the use of the target forms. Our results thus support findings from previous studies suggesting that C-BLI can be an effective tool in promoting and supporting learners' metalinguistic knowledge of a given target concept. Furthermore, the practice element during intervention appeared to be an important element in the study judging by the improvement observed in their use of the three target forms at least as attested by the delayed post-test. Thus, practice should be designed in a way that indeed helps learners make form-meaning connections while making grammatical choices.

We think it is time to begin implementing C-BLI systematically in the L2 curriculum and as an integral part of academic cycles given its potential as suggested by evidence from this and other studies to date as outlined in the background section above. To achieve this, however, further studies need to investigate ways and strategies to promote teachers' awareness about the importance of implementing C-BLI models in their classrooms (see Esteve, 2018; and Esteve, Fernández, and Bes, 2018). Researchers need to link their efforts with those of teachers and provide training and recommendations for specific applications of the C-BLI model. An ultimate goal is perhaps to aim towards the development and design of textbooks based on SCT approaches to pedagogy.

We would like to acknowledge some limitations of the study reported in this article. As is the case with any research project, it was necessary to make certain choices over others in order to fulfil the research objectives. While we clearly believe that gauging the relative potential of C-BLI with respect to other pedagogical approaches represents a step forward in our understanding of its value in the L2 context, such comparisons come with caveats. For example, while the results suggest benefits of C-BLI over PPP, our commitment to keeping the intervention as ecological as possible meant that the research design did not allow for

assessment of specific pedagogical components. In other words, was it the materials as such, e.g., the tutorial cards, or the verbalization per se that made a difference? Was the type of practice implemented as part of the C-BLI intervention itself that had an impact compared to the PPP practice exercises?[4] It is also important to recognize that the novelty of the approach might have had an impact on the results.

Furthermore, while trying to assess the longer-term effect of treatment is another important issue in our field, we need to acknowledge that participants' personal activities between testing times might have a role to play in the outcomes. This applies to both groups, of course, but one needs to reflect on the matter nonetheless. Our findings necessarily relate to a specific context, but we hope that the use of inferential statistics on the one hand, and previous research, on the other, contribute to cautious optimism regarding the potential of C-BLI as a viable alternative to drive L2 learning forward. Future research that compares C-BLI to other non-traditional approaches such as Input Processing (VanPatten, 2015), Task-Based Language Learning (Long, 2015) or based on Skill Acquisition Theory (DeKeyser, 2015) and Complex Dynamic Systems Theory (Larsen-Freeman, 2015) for example will, undoubtedly, contribute to advances in instructed L2 learning.

Acknowledgements

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[4] Once again, we wish to thank one of the reviewers for their insightful comments on this matter. They point out to Gal'perin's large-scale studies in schools which uncovered the contributions of each aspect of the model to development. According to Talyzina (1981), it was found that leaving out any of the components had a negative effect on outcomes. This highlights the integrated nature of the model and its roots in Vygotsky's coherent theory of development. We clearly need similar studies which specifically look at these issues in relation to instructed L2 learning.

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Appendices

Appendix A: C-BLI group data collection procedure.

Week one						Week two				Week three	
Session one		*Session two (intervention)*		*Session three (intervention)*		*Session four (intervention)*		*Session five*		*Session six (Three weeks later)*	
	Time		*Time*		*Time*		*Time*		*Time*		*Time*
Induction	10'	Explanation regarding the materials, verbalization demonstration and recording	20'	Verbalization while working with the C-BLI materials	45'	Practice tasks	45'	Post MLK and LU tests	30'	Delayed post-tests: MLK and LU	30'
Pre-tests: MLK and LU PBQ	30' 30' 15'	Recording trial Verbalization while working with the C-BLI materials	5' 45'	Teacher led instruction	30'	Feedback at the end of the session	30'	CBIQ[5]	30' 15'		30'

Appendix B: PPP group data collection procedure.

Week one						Week two				Week three	
Session one		Session two (intervention)		Session three (intervention)		Session four (intervention)		Session five		Session six (Three weeks later)	
	Time		*Time*		*Time*		*Time*		*Time*		*Time*
Induction about the experiment and ethical approval Pre-tests: MLK and LU LU PB Questionnaire	10' 30' 30' 15'	Lesson one: Verb[6] Lesson two: past simple	40' 40'	Lesson three: past continuous Lesson four: present perfect	40' 40'	Practice Feedback at the end of the session	45' 30'	Post-tests: MLK and LU PPP Questionnaire	30' 30' 15'	Delayed post-tests: MLK and LU	30' 30'

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[6] The lesson included the type of verbs in English; action and state verbs.

Put the verb in brackets in the appropriate form:

Travel Book

There are many reasons why individuals (1)……………… (travel) beyond their own societies. Some travellers simply (2) ……………… (desire) to satisfy curiosity about the larger world. Until recent times, however, travellers did start their journey for reasons other than mere curiosity. While travellers' accounts (3) ……………… (give) much valuable information on these foreign lands and (4) ……………… (provide) a window for the understanding of the local cultures and histories, they (5) ……………… (be) also a mirror to the travellers themselves, for these accounts help them to (6) ……………… (understand) themselves.

Travel accounts (7) ……………… (appear) in Mesopotamia and Egypt in ancient times. They held strong appeal from rulers who (8) ……………… (desire) useful information about their kingdom. Herodotus, the Greek historian, used travel accounts to report on his travel to Egypt and Anatolia. He (9) ……………… (research) the history of the Persian war. The Chinese envoy Zhang Qian described much of central Asia when he (10) ……………… (search) for allies for the Han dynasty. Travel accounts were also used by Geographers to compile vast compendia of geographical knowledge.

During the postclassical era, trade and pilgrimage emerged as a major incentive for travel to foreign lands. Muslim merchants travelled along the eastern hemisphere. They (11) ……………… (look for) trading opportunities. They supplied the first written accounts of societies in sub-Saharan West Africa. While merchants set out in search of trade and profit, devout Muslims travelled as pilgrims to Mecca to make their Hajj and (12) ……………… (visit) the holy sites of Islam. Since the prophet Mohamed's original pilgrimage to Mecca,

untold millions of Muslims (13) ……………… (follow) his example, and thousands of hajj accounts (14) ……………… (relate) their experiences.

In the early modern era, European explorers (15) ……………… (take) the centre stage. European travellers ventured to the distant corners of the globe. Their travel accounts were for the first time published in the press. The volume of travel literature (16) ……………… (jump) so much that several editors assembled numerous travel accounts and made them available in enormous published collections. In the 19th century, European travellers made their way to the interior regions of Africa and the Americas. During their exploration, they were depicting the culture and the way of living of Africans and Americans in their travel writing. Meanwhile, European colonial administrators devoted numerous writings to the societies of the Asian and African colonies that they (17) ……………… (establish).

The 20th century (18) ……………… (witness) an explosion in both the frequency of long-distance travel and in the volume of travel writing due to the inexpensive and reliable means of mass transport. Publications of travel books (19) ……………… (hit) a peak due to the emergence of new types of travel such as, tourism. Tourism enabled people to go away from home to see the sights in Rome, take a cruise in the Caribbean or go on safari in Kenya. A peculiar variant of travel account arose to meet the needs of those tourists, such as the guidebook that offered advice on food, lodging, shopping, etc. Tourism (20) ……………… (have) a massive impact throughout the world, but other new forms of travel have also had considerable influence in the contemporary times.

Answer Key LU test

1- have travelled	11- were looking for
2- have simply desired	12- visit (distractor)
3- give (distractor)	13- have followed
4- provide (distractor)	14- have related
5- are (distractor)	15- took
6- to understand (distractor)	16- jumped
7- appeared	17- established
8- desired	18- witnessed
9- researched	19- hit
10- was searching/searched	20- has had

Appendix D: Input examples of non-consecutive C-BLI cards for *aspect*

What is Aspect?

Aspect is the grammatical form used by the speaker to describe how he/she views the situation.

10

Summary of the Viewing Scope:
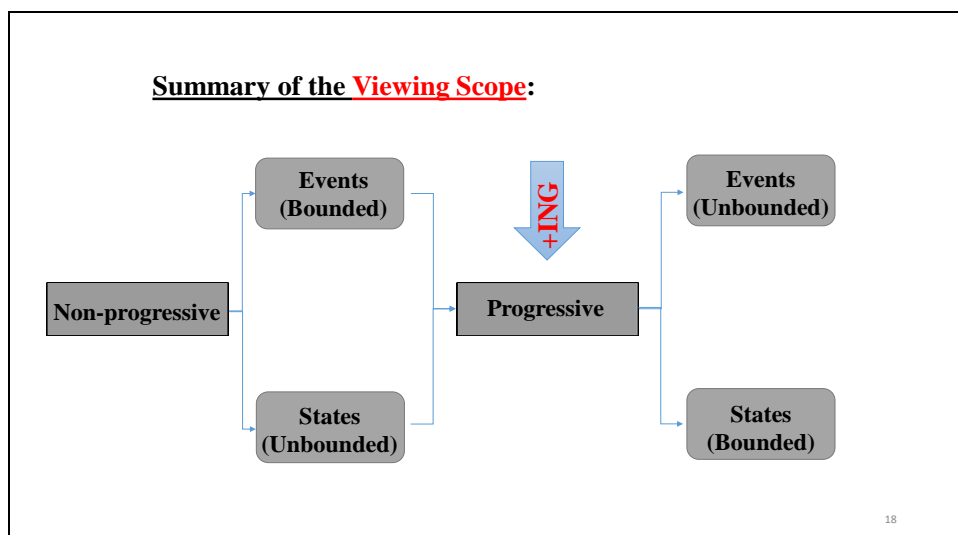
Appendix E: Example of C-BLI practice

Match each sentence with the diagram that best reflects the meaning of the sentence. Use the table below to answer. An example is already provided. A diagram can reflect the meaning of more than one sentence. One sentence does not have a matching diagram.

Diagram	Sentence
A	
B	
C	
D	4
E	

1- We were eating and listening to music.

2- He was living in New York at that time.

3- We ate and listened to music.

4- I have worked in the company since 1993.

5- Grand pa has passed his driving license.

6- He painted a graffiti on the wall.

7- He had his heart broken before he met her.
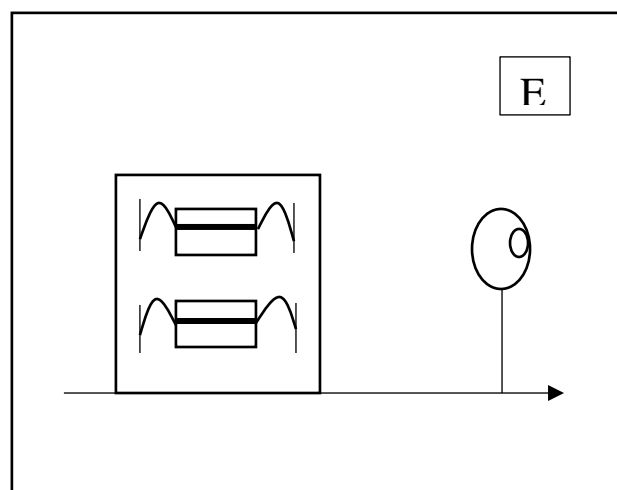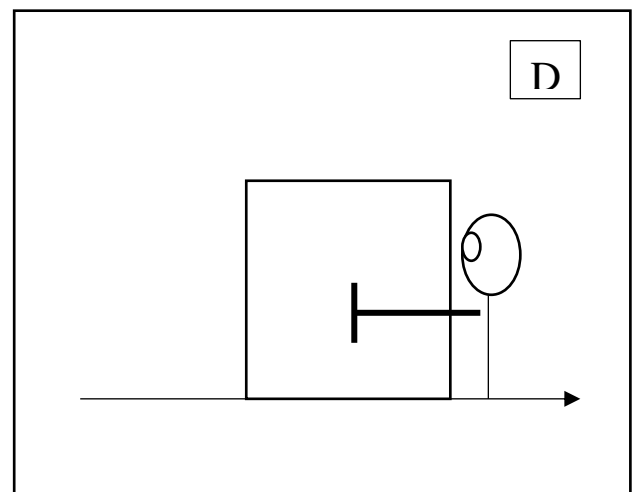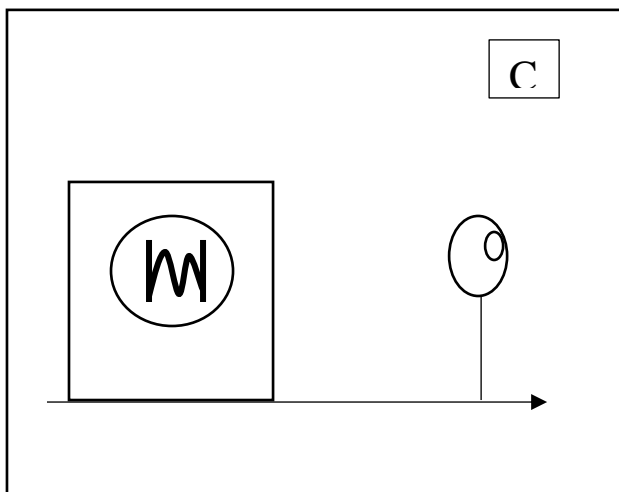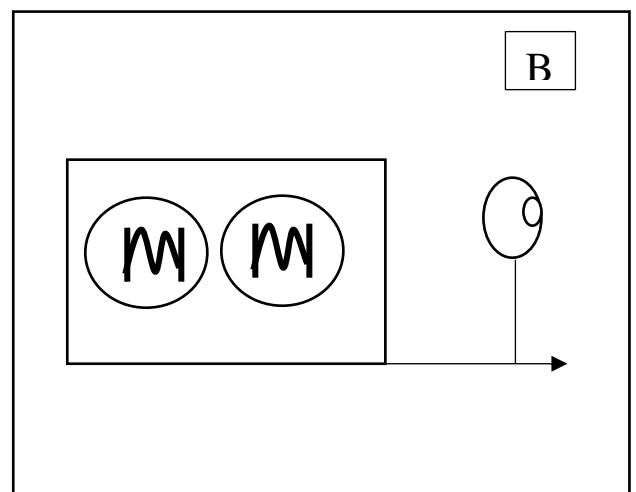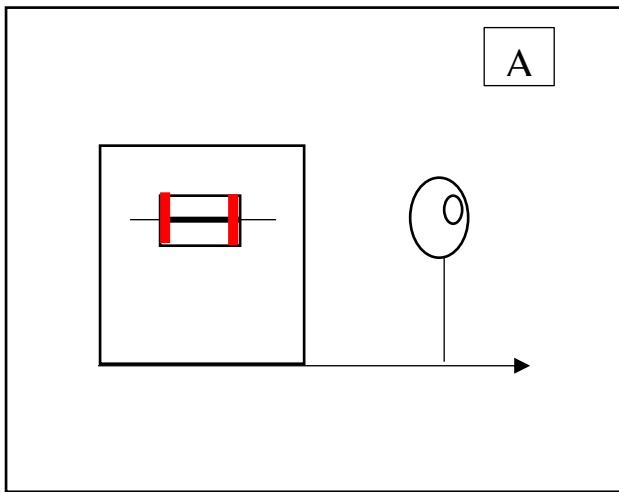
Appendix F: Example of PPP (Simple Past)

Examples

1- I *loved* her then.

2- I *ran* three miles yesterday.

3- They *built* that house a long time ago.

4- We *reached* the summit just before noon.

5- Last night we *ate* dinner in that Italian restaurant you like so much.

Rules

1- The simple past tense is represented by *–ed* inflection on regular verbs and by other *changes* in the case of irregular verbs.

2- The simple past expresses an action *prior to* the time of speaking.

3- The simple past tense frequently occurs with expressions that indicate *a specific point in time* when the action was carried out, such as *yesterday, a week ago, last Monday, at four o'clock, in the morning, on Tuesday* and so on.

4- The simple past can be used with *state verbs*.

5- Since state verbs have an unlimited duration, the presence of a time adverb such as *then* with stative, leaves open the possibility that the *state still exist* (Example 1).

6- When two complete actions follow each other, we use the past simple:

Tim *got up* when the doorbell *rang*.

7- The simple past is usually used for *narration*. (*Once upon a time a Princess **went** into a wood and **sat down** by a stream*).

Appendix G: Example of PPP practice

Use your own ideas to complete the following sentences. Use the past continuous.

   1- Tom burnt his hands when **he was cooking dinner**.

   2- The doorbell rang while I …………………………………….

   3- We saw an accident while we …………………………………..

   4- Mary fell asleep while she………………………………………………

   5- The television was on but nobody…………………………………………

Appendix H: MLK test scoring scheme

Question	Key	Points
Section A		
1. What is tense?	Tense refers to where the speaker locates a situation in time.	0-3
2. Have you ever heard about "aspect" in English? If, yes, explain what you understand about "aspect" in English?	Aspect is the grammatical form used by the speaker to describe how she/he views the situation.	0-3
3. English marks two aspectual distinctions; can you name them and explain how they are formed?	The progressive. Be+ V +ing Perfect. Have/has+ past participle Had +past participle.	0-4 Perfect=1pt Form=1pt Progressive=1pt Form= 0.5 pt for each form
4. There are two types of verbs in English "State" and "Event". Can you explain what the difference between them is?	Events Dynamic verbs which involve internal development (change). They have inherent boundaries: they are supposed to come to an end at some point. States Static verbs which do not involve internal development (change). They do not have inherent boundaries because they are seen as rather permanent situations.	0-6 Events= 0-3 States= 0-3
Section B		
1. A. She has been in England for four years. B. she was in England for four years.	A. entails still being in England. B. entails not being in England anymore.	2 1pt for each correct answer
2. A. Have you seen my keys? B. Did you see my keys?	A. entails still looking for the keys. B. entails not looking for keys anymore.	2 1pt for each correct answer
3. A. He kicked the ball. B. He was kicking the ball.	A. he kicked the ball once. B. he kicked the ball repeatedly.	2 1pt for each correct answer
4. A. He left when you arrived. B. He was leaving when you arrived.	A. he left immediately after you arrived B. the emphasis here is on the simultaneity of the two actions	2 1pt for each correct answer
		Max total possible = 24 points

Appendix I: Overall analysis using mixed design ANOVA

Source	df	Error	F	p	η_p^2
Time [a]	2	86	22.96	**<.001**	.35
Time*Group[c]	2	86	4.27	**.017**	.09
Measure*Group	1	43	2.4	.13	.055

Appendix J: Mixed design ANOVA (MLK test)

Group	Source	df	error	F	p	η_p^2
C-BLI	Time	2	48	29.01	**<.001**	.55
PPP	Time	2	38	4.98	.12	.21

Appendix K: Mixed ANOVA pairwise comparison with Bonferroni adjustment (MLK test)

Group		MD	Std. Error	p
C-BLI	Pre-test- Post-test	-17	2.05	**<.003**
	Pre-test- Delayed Post-test	-11.5	2.13	**<.003**
	Post-test- Delayed Post-test	5.5	2.61	.42

Appendix L: C-BLI vs PPP independent samples t-test with Bonferroni adjustment (MLK test)

	t	df	p
Pre-tests %	1.33	43	.57
Post-tests %	4.62	43	<.003

Delayed post-tests %	4.76	43	<.003

Appendix M: Mixed design ANOVA (LU test)

Group	Source	*df*	*error*	*F*	*p*	*η_p^2*
C-BLI	Time	2	48	9.74	**.001**	.29
PPP	Time	2	38	.6	.55	.031

Appendix N: Mixed design ANOVA pairwise comparison with Bonferroni adjustment (LU test)

Group		*MD*	*Std. Error*	*p*
C-BLI	Pre-test- Post-test	-4.8	3.03	1.00
	Pre-test- Delayed Post-test	-13.8	3.6	**<.003**
	Post-test- Delayed Post-test	-9	3.41	.132

Appendix O: C-BLI vs PPP independent samples t-test with Bonferroni adjustment (LU test)

	t	*df*	*p*
Pre-tests %	.765	43	1.00
Post-tests %	1.28	41.23	.6
Delayed Post-tests %	3.66	43	**.003**