

Applying cognitive approach to teaching prepositions in business English: a case study

Примена когнитивно-лингвистичког приступа у настави предлога у пословном енглеском језику: студија случаја

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Abstract: The paper sets out to investigate the potential advantages of applying insights from the field of cognitive linguistics to teaching prepositions in business English over an approach relying on the traditional linguistic framework. For the study, three of the English prepositions were chosen: to, for, and at. Study participants were divided into two groups: an experimental group, which received a cognitive treatment of the three prepositions; and a control group, which received an instruction relying on traditional accounts. The participants were administered three tests in total: a pretest, an immediate posttest, and a delayed posttest. Their scores were taken on all three tests and then compared within each group and between the groups. To calculate the results, descriptive statistics, t-test of independent means and one-way ANCOVA were used. Grounding the expected results in expert literature, it was anticipated to obtain the results indicative of the advantage of the cognitive approach. According to the study results, the experimental group outperformed the control group at all levels of statistical analysis. The results suggest that a strategic incorporation of a cognitive view of the structure of language into the foreign language classroom could facilitate better understanding, more effective learning and long-term retention of the language points taught.

Keywords: applied cognitive linguistics, prepositions, business English, semantic network, conceptual metaphor

JEL classification: A20, A22, Z13

Сажетак: Циљ рада је да истражи потенцијалне предности примене увида из области когнитивне лингвистике у настави предлога у пословном енглеском језику над приступом заснованом на традиционалном лингвистичком оквиру. За потребе студије, изабрана су три енглеска предлога: to, for и at. Учесници истраживања су подељени у две групе: експерименталну групу, која је добила когнитивно-лингвистички третман три одабрана предлога; и контролну групу, која је добила инструкције које се ослањају на тумачења традиционалне лингвистике. Учесници су радили укупно три теста: тест који је претходио инструкцији, пост тест одмах након инструкције, и одложени пост тест два месеца након инструкције. Постигнућа учесника су измерена на сва три теста и затим су упоређена унутар сваке од група и између група. Приликом израчунавања резултата коришћени су дескриптивна статистика, t-тест независних узорака и униваријантна анализа коваријансе (ANCOVA). Базирајући се на стручну литературу, очекивали су се резултати који указују на предност когнитивног приступа. На основу резултата истраживања, експериментална група је остварила предност на свим нивоима статистичке анализе. Резултати указују на то да би стратешка инкорпорација когнитивног виђења структуре језика у језичке учионице помогла бољем разумевању, ефективнијем учењу и дугорочној ретенцији предаваних језичких јединица

Кључне речи: примењена когнитивна лингвистика, пословни енглески језик, предлози, семантичке мреже, концептуална метафора
ЈЕЛ класификација: A20, A22, Z13

Introduction

Linguistic investigations originating from the scope of cognitive linguistics (CL) are not new as a solid ground for them to take off was laid in the 1980s, with the works of Lakoff and Johnson (1980) and Langacker (1987). Their highly influential respective theories of cognitive semantics and cognitive grammar broke off with many of the traditions of the predominating, generative linguistics of Chomsky (1965). Away from the view of language as an autonomous, isolated system with its domain-specific rules and properties that separate language from the general cognitive system, CL introduced a theoretical framework that treats language as an integral part of human cognition, which systematically reflects our cognitive processing and experience with the social-physical world (Tyler, 2012). Such a view presents a dramatic turn from a system traditionally assumed to operate in a largely arbitrary and idiosyncratic fashion to a highly motivated system with recurring cognitive patterns found at all levels of linguistic analysis (Ђуровић, 2017). From a pedagogical aspect, given that learning an additional language (L2) in formal settings still heavily relies on traditional linguistics where a wide range of L2 points are taught and learnt via lists of rules and exceptions to the rules, CL offers a different understanding of the nature and organization of language that allows learners to take a more holistic perspective on language governing principles.

Insights from CL have a substantial pedagogical potential as they could facilitate better understanding, more effective learning, and long term-retention of some of the common problematic areas in L2 learning (Ђуровић, 2017). Among these, mastering L2 prepositions has proved to be one of the major challenges for L2 learners. The reason for this is that the semantics of prepositions is rather complex. Namely, the distinction between the meanings of some prepositions can be quite unclear at a first glance, as is the case with the English prepositions over and above. Another prominent feature of prepositions is that they tend to have an elaborate set of distinct meanings, a good example of which is the English preposition over with its, at least, 16 meanings (Tyler & Evans, 2003). If we add to this the fact that prepositions are typically taught and learnt as if their meanings are not related in any systematic way, as suggested by traditional theoretical accounts, the difficulties associated with attaining proficiency in this area of L2 learning become even more obvious.

1. Literature review

Investigations on spatial language grounded in CL have delivered conclusions quite different from those stemming from the traditional linguistic framework. The position promoted by cognitive linguists is that of polysemy, which holds that distinct meanings associated with a single preposition are not arbitrary but are in a systematic, rule governed relationship (Tyler & Evans, 2003). In other words, distinct meanings of a linguistic form

are not represented as multiple, unrelated pairings in the mental lexicon but are understood as a single mental representation where a form is paired with a set of distinct but related meanings that constitute a semantic network. Typically, such networks are organized around a central sense from which other senses are derived in a radial fashion (Tyler & Evans, 2003).

The idea of a semantic network with systematic relationships between the meanings it comprises rests upon some of the basic CL principles. Starting from an observation that interpretations commonly assigned to strings of words or sentences are far richer than the sum of individual lexical entries, a CL conclusion is that the process of meaning construal depends on information beyond strictly linguistic, as previously assumed (Tyler, 2012). In the process, we rely on all of our available knowledge of a particular conceptual entity, i.e., an accumulated reservoir of information drawn from our experience of and interaction with the social-physical world, to interpret what we hear or read (Đurović, 2017). Meaning construal occurs at the conceptual level where language and the actual words we use “refer to what is represented in the human conceptual system” (Tyler & Evans, 2003:3). Language, then, is a means of conceptualization as it provides us with information that supports general principles of understanding (Lakoff & Johnson, 1980). Also, a CL claim that meaning is grounded in experience strongly emphasizes that what we perceive as everyday reality is not to be considered an objective view of the world because any input we receive from the environment is fundamentally affected by the physiology and neural architecture of our bodies (Tyler & Evans, 2003). Within the CL framework, this view of meaning and meaning construal is referred to as embodied meaning.

In this light, language with its semantic categories is not to be seen as a stable system because it needs to have the quality to adapt to and accommodate any new experiences and changes in the world around us. This makes linguistic structures and word meaning dynamic and flexible (Đurović, 2017). Within the theory of word meaning, a CL stand is that a semantic response to the need to communicate a novel experience or situation is sometimes seen in a new phonological string but most commonly it occurs via the process of meaning extension (Tyler & Evans, 2003). Having in mind that communication is the primary role of language, any novel use of a lexical form with an already established meaning would only make sense if it was reasonable to expect for the form to be interpreted as the speaker intends (Tyler, 2012). What follows is that polysemous lexical units, a good example of which are prepositions, have derived their distinct meanings through meaning extension grounded in situated communication.

Even though prepositions are frequently used with meanings that go beyond the physical and concrete, central sense of any preposition always communicates the way entities are related to each other in terms of space. Spatial scene is a CL concept used to describe how we conceptualize different spatial configurations between real-world entities (Tyler & Evans, 2003). There are several elements that constitute each spatial scene: a smaller and movable entity or a trajector (TR); a larger and immovable entity or a landmark (LM) with respect to which a TR is located; and a conceptual spatial relation between a TR and LM signalled by a preposition. Each spatial scene also includes a functional element

indicative of real-world consequences of two entities being placed in a certain configuration. It is the functional element of spatial scenes that makes them abstract conceptualizations i.e., the result of interaction of our experience with the spatial-physical world and conceptual processing, rather than a realistic projection of the outside world (Tyler & Evans, 2003).

Spatial scenes, with their functional aspect in particular, are an important CL construct as they lie ground for the process of meaning extension through which additional senses of a preposition are derived. For any additional sense to be qualified as a distinct sense away from the central meaning of a preposition, it either needs to be a new spatial sense that involves a certain modification of a TR-LM configuration found in the original scene or a sense that involves additional, non-spatial meaning (Tyler & Evans, 2003). Non-spatial meanings of prepositions always arise from the correlated non-spatial consequences of spatial configurations i.e., the functional element of spatial scenes. Throughout the process, we assume that the principles of real-world force dynamics also hold in contexts away from the physical and concrete and that is how additional prepositional meanings may refer to completely abstract contexts (Tyler, 2012). Meaning extensions of this kind are only possible because of the metaphorical nature of our conceptual system. Within CL, metaphor is placed at the very centre of our thought processes, allowing us to make connections between our experience with the external, physical phenomena and the more internal, abstract phenomena (Lakoff & Johnson, 1980). Metaphorical mappings we make between the physical (source) and abstract (target) domains are typically asymmetrical, in the sense that they may highlight one aspect of the spatial scene and at the same time obscure the other. Any change or addition in highlighting can call for new, additional meanings (Tyler, 2012). This way, an elaborate set of senses may be derived that, on the surface, may seem unrelated but all additional senses can be traced back if not to the central sense, then to one of the previous senses derived from the central one. In this light, it becomes evident that the process of meaning extension is both motivated and follows a certain systematic pattern based on metaphor.

A CL view of metaphor makes a sharp turn from a peripheral property of language based on a traditional distinction between linguistic and non-linguistic knowledge, and recognizes metaphor as encompassing the two. As such, metaphor becomes a cognitive instrument of meaning construal and a key organizing principle not only in language but in thought processes as well (Đurović, 2017). Metaphors allow us to make coherent and systematic relationships both within and between individual concepts and without the ability to establish such links, we could not fully understand a wide range of concepts that are of paramount importance to us such as emotions, ideas, or time. To comprehend any of the concepts that are abstract or not clearly delineated in our experience, we use other concepts we understand in more concrete terms such as spatial orientations or objects. This, in turn, leads to metaphorical definitions in our conceptual system we depend on in even attempting to understand ourselves and the world around us (Lakoff & Johnson, 1980).

The intricate way in which physical experience interacts with our conceptual system and how this is reflected in language is probably most clearly evidenced in the rich semantic flexibility of spatial particles (Tyler, 2012). Their use reveals how some of our

most basic experiences of physical space, and the way we understand and organize them, form the basis for construction and understanding of more complex concepts (Mandler, 2004). Given the graphic and relatable way in which CL presents the logic of prepositional meanings, the present study is an attempt to investigate L2 learner benefits resulting from an instructional approach to L2 prepositions that appreciates cognitive principles in language. These, above all, include the ideas of interconnectedness of language and experience, embodied meaning, semantic networks, spatial scenes, and conceptual metaphor.

2. Research sample and methodology

The main idea of the study was to explore the potential advantages of applying insights from CL to L2 teaching practice over the traditional approach relying on Chomskyan linguistics. The reason for this was twofold. To start with, even though it has been more than forty years now since CL delivered its intriguing theory of language, not much of it has found way to the language classroom, which still heavily relies on descriptive and pedagogical grammars, textbooks and materials based on traditional linguistics (Tyler, 2012). Also, most people experience great difficulty in their attempts to master an L2, regardless of whether L2 learning is their own choice, or it is imposed on them through an educational process or by career needs. This is because language learning is one of the most demanding cognitive tasks we achieve throughout life. Contrary to the popular belief among non-scholars in the field, not even children learn their mother tongue effortlessly and within their early childhood years. Research has shown that it approximately takes ten years for one's first language to set in, with many aspects of pragmatics taking even longer (Tyler, 2012). Having this in mind, it would be worthwhile to investigate the options stemming from CL that offer a more systematic understanding of language and, as such, could facilitate more effective L2 learning (Đurović, 2017).

Prepositions, as an L2 field of interest in the study, were also chosen for two reasons. Firstly, semantics of L2 prepositions is notoriously difficult to master and traditionally presents one of the major challenges for L2 learners (Celce-Murcia & Larsen-Freeman, 1999). Even though most languages use a prepositional system to describe both spatial and non-spatial relations and domains, the variance with which they are exploited is far too great across languages to allow predictability (Tyler, 2012). And secondly, the rich semantics of prepositions is one of the clearest examples of CL principles at work (Tyler & Evans, 2003). For the present study, three of the English prepositions were chosen: *to*, *for* and *at*. The choice was mainly inspired by the study of Tyler et al. (2011), where the three prepositions are pointed to as being subject to erroneous use even with advanced learners.

Although most of the studies of a similar design were conducted either with advanced L2 learners (e.g., Tyler et al., 2011), or with learners whose level of L2 proficiency was at approximately the same level (e.g., Dolgova Jacobsen, 2016), the present study was carried out with participants who hadn't been scanned for their level of L2 English proficiency. As a result, the study was conducted with a heterogeneous group of participants in terms of their L2 skills. This was done because L2 teachers commonly face

learner groups of a similar structure. Study participants were students who had enrolled the Faculty of Economics in Subotica, University of Novi Sad, weeks prior to the study. A regular part of their curriculum is a two-year English course, within which the study was conducted. Participant groups were chosen randomly out of ten groups of first-year students. In line with the main objective of the study, it was decided that obtaining data solely on the effect of a CL based instruction on L2 prepositions would not be informative enough. Accordingly, the study was designed to include two groups of participants: an experimental group and a control group. The experimental group received a cognitive treatment of the three prepositions, and the control group received an instruction based on traditional accounts. The total number of participants was 55, with the experimental group counting 27 and the control group counting 28 participants.

A two-group design was applied with an aim to measure the participants' performance prior and after the instruction within each group, and then to make an inter-group comparison of scores. Participant performance was measured three times in total. A pretest was administered before the instruction to obtain data against which the effect of instruction was to be measured; an immediate posttest at the end of instruction was used to calculate the short-term effect of instruction; and a delayed posttest eight weeks after the instruction to check for the long-term effect. All three tests had a forced choice, fill in the blanks format. The tests included fifty sentences, each with a missing preposition. There were thirty-five target items and fifteen filler items in each test. Only participants' answers on target items were used in calculating scores.

The study started with a pretest for both groups of participants. Following the pretest, each of the participant groups attended two, 90-minute instructional sessions on the three prepositions that were a week apart.

At the beginning of the instruction, the experimental group was introduced into the field of CL. They were presented with the main CL ideas relevant to the semantics of prepositions, which included the communicative nature of language, embodied meaning, spatial scenes, semantic networks, and conceptual metaphor. Over the course of the remaining part of the first session and throughout the second session, the participants were provided with detailed explanations of the semantic networks for *to*, *for* and *at*. With each preposition, the discussion started with the central, spatial meaning of the preposition and the original spatial scene. All additional meanings were included afterwards, when metaphor-based mechanisms of meaning extension for each of the additional senses were presented to them on the board in the form of a diagram. Both central and additional senses of the three prepositions were labelled as suggested by Tyler & Evans (2003) in their CL based analysis of the semantics of the targeted prepositions. In the case of *to*, the explanation of its semantic network started with the central sense of facing a goal. Extended meanings with the underlying metaphor-based cognitive mechanisms were introduced and explained in the following order: facing a goal – receiver – receiver of experience; facing a goal – object of attention; facing a goal – limit – contact – attachment; facing a goal – perceptual experience. The preposition *for* was introduced with its central sense of intention. Its extended meanings with the underlying cognitive mechanisms were given and explained in the following order: intention – purpose – benefit – exchange; purpose –

expected response – desired response; expected response – personal response. Finally, the sense of collocation was given as the central meaning of the preposition at while the explanations for the extended, additional meanings were given as follows: collocation – functional association – intensity; collocation – measurement scale; collocation – intended collocation; collocation – mutual relations – emotional reaction – provoked state. After the theoretical part of the instruction, the participants were involved in group work exercises which consisted of sample sentences with a missing preposition. They were asked to agree on the missing preposition within a group and then read their answers aloud. All the participants were encouraged to give comments on whether they agreed with the answers they heard.

On the other hand, the control group also received detailed explanations on the meanings of the three prepositions, with a difference that the treatment was not CL based but included a list of possible meanings with numerous illustrative examples. Even though the control group was not presented with any sort of cognitive analysis, the discussion of each proposition started with its spatial meaning. The extended meanings were not given in any organized way but were just randomly listed and explained. Participants in the control group were afterwards also involved in group work exercises, followed by active participation in discussions on the answers provided.

After a 15-minute break following the instruction, both groups of participants were administered an immediate posttest. The participants were tested once more, eight weeks after, when they were asked to take a delayed posttest. The three tests were composed in similar fashion, and both groups of participants were administered the same tests.

Participant scores were taken on all three tests to calculate the results. In the analysis, type of instruction was an independent variable against which the effect of instruction was measured and compared within, and between the groups. Descriptive statistics was used to show minimum, maximum, and mean values on each of the tests for both groups. This was to identify the presence of short- and long-term effect of instruction. Next, t-test of independent means was applied to make an inter-group comparison of the participants' scores along the timeline. The calculation was to show the difference in the level of performance at two points in time after the intervention depending on the type of instruction. Finally, a one-way ANCOVA was conducted for an inter-group comparison of the intensity of the effect of instruction over time. To achieve this, pre-intervention, immediate post-intervention, and delayed post-intervention states were considered. At all levels of statistical analysis, it was aimed to establish a potential advantage of one of the instructional approaches.

3. Results

The first step in the analysis was to calculate the participants' group performance indicators on all three tests. As can be seen from Table 1, the difference in calculated minimum, maximum, and mean values within individual participant groups between the pretest and the immediate posttest results is indicative of a positive effect of instruction for both groups. This is also evidenced in the average gain for both groups. Even though both

groups of participants benefited from the instructional approaches applied, the results also show a higher average gain for the experimental group (6.07) than the average gain for the control group (3.36).

Table 1: Participants' group results on the pretest and the immediate posttest

Group	Pretest Minimum	Pretest Maximum	Pretest Mean	Pretest Std. Deviation	Immediate posttest Minimum	Immediate posttest Maximum	Immediate posttest Mean	Immediate posttest Std. Deviation	Gain Average
Experimental	5	25	13.52	5.381	8	30	19.59	5.740	6.07
Control	4	23	12.96	5.357	7	27	16.32	6.110	3.36

Source: the author's calculation

Based on the values calculated from the participant scores on the immediate and the delayed posttest, a certain drop in performance for both groups was evident. This was expected as a lower level of performance is common after prolonged periods of time following instruction without revising in any field of learning. Even so, the results demonstrate that the average drop in scores for the experimental group (1.81) was lesser than the drop identified in the control group (2.89). The results of the immediate posttest and the delayed posttest are given in Table 2.

Table 2: Participants' group results on the immediate posttest and the delayed posttest

Group	Immediate posttest Minimum	Immediate posttest Maximum	Immediate posttest Mean	Immediate posttest Std. Deviation	Delayed Posttest Minimum	Delayed Posttest Maximum	Delayed Posttest Mean	Delayed Posttest Std. Deviation	Gain Average
Experimental	8	30	19.59	5.740	7	29	17.78	5.666	-1.81
Control	7	27	16.32	6.110	4	25	13.43	5.500	-2.89

Source: the author's calculation

However, despite the drop in performance detected for both groups between the two posttests, the results from the participant scores on the pretest and the delayed posttest suggest that both groups of participants have gained from instruction not only short-term

but also long-term. Based on the calculated results, the average gain for the experimental group (4.26) was once again higher than the average gain for the control group (0.47). This is shown in Table 3.

Table 3: Participants' group results on the pretest and the delayed posttest

Group	Pretest Minimum	Pretest Maximum	Pretest Mean	Pretest Std. Deviation	Delayed Posttest Minimum	Delayed Posttest Maximum	Delayed Posttest Mean	Delayed Posttest Std. Deviation	Gain Average
Experimental	5	25	13.52	5.381	7	29	17.78	5.666	4.26
Control	4	23	12.96	5.357	4	25	13.43	5.500	0.47

Source: the author's calculation

As an effect of instruction was detected for both groups on the first test after the instruction, with a difference in the average gain favouring the experimental group, it was necessary to determine whether the difference in the exhibited performance was statistically significant. Results of a t-test of independent means used for this calculation are given in Table 4. Comparison of the immediate posttest results between the experimental and the control group suggests that the experimental group outperformed the control group with a statistically significant difference ($p < 0.05$).

Table 4: Inter-group comparison of the immediate posttest results

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed) p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Immediate posttest	0.590	0.446	2.045	53	<u>0.046</u>	3.271	1.600	0.062	6.480

Source: the author's calculation

The same statistical analysis was conducted to test whether the difference in the level of performance between the groups would still be statistically significant on the delayed posttest. As the results suggest, the difference was statistically significant again when the long-term effects of instruction were compared. This is shown in Table 5. In sum,

the experimental group outperformed the control group on both tests that followed the instruction with a statistically significant difference ($p < 0.05$).

Table 5: Inter-group comparison of the delayed posttest results

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2- tailed) p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Delayed posttest	0.003	0.956	2.889	53	<u>0.006</u>	4.349	1.506	1.329	7.369

Source: the author's calculation

In addition to the previous analyses, a one-way ANCOVA was conducted to test whether there was a statistically significant difference in progress achieved on the immediate posttest between the experimental and the control group. This inter-group comparison on the level of progress exhibited immediately after instruction revealed that there was a statistically significant difference in favour of the experimental group, as given in Table 6 ($p < 0.05$).

Table 6: Inter-group comparison of the difference between the immediate posttest and pretest results

Dependent Variable: Immediate posttest								
Source	Type III Sum of Squares	df	Mean Square	F	Sig. p	Partial Eta Squared	Noncent. Parameter	Observed Power
Corrected Model	1824.948	2	912.474	254.060	0.000	0.907	508.120	1.000
Intercept	125.207	1	125.207	34.861	0.000	0.401	34.861	1.000
Pretest	1677.864	1	1677.864	467.168	0.000	0.900	467.168	1.000
Group	99.214	1	99.214	27.624	<u>0.000</u>	0.347	27.624	0.999
Error	186.762	52	3.592					
Total	19688.000	55						
Corrected Total	2011.709	54						

Source: the author's calculation

As a drop in the effect of instruction was detected between the immediate and the delayed posttest for both groups, a one-way ANCOVA was conducted again to test whether there was a statistically significant difference in drop between the experimental and the control group. The results shown in Table 7 suggest that the drop calculated for the experimental group was significantly lesser than the drop identified for the control group ($p < 0.05$).

Table 7: Inter-group comparison of the difference between the delayed posttest and the immediate posttest results

Dependent Variable: Delayed posttest								
Source	Type III Sum of Squares	df	Mean Square	F	Sig. p	Partial Eta Squared	Noncent. Parameter	Observed Power
Corrected Model	1802.079	2	901.039	428.092	0.000	0.943	856.184	1.000
Intercept	2.765	1	2.765	1.314	0.257	0.025	1.314	0.203
Immediate posttest	1542.075	1	1542.075	732.654	0.000	0.934	732.654	1.000
Group	24.066	1	24.066	11.434	0.001	0.180	11.434	0.913
Error	109.449	52	2.105					
Total	15234.000	55						
Corrected Total	1911.527	54						

Source: the author's calculation

The same statistical analysis was conducted to compare the overall gain achieved by the experimental and the control group. The inter-group comparison on the progress between the pretest and the delayed posttest suggests that there was a statistically significant difference in the overall gain between the two groups ($p < 0.05$). Once again, the experimental group was identified as having progressed significantly better than the control group. The results of the compared long-term effects of instruction are given in Table 8.

Table 8: Inter-group comparison of the difference between the delayed posttest and the pretest results

Dependent Variable: Delayed posttest								
Source	Type III Sum of Squares	df	Mean Square	F	Sig. p	Partial Eta Squared	Noncent. Parameter	Observed Power
Corrected Model	1735.826	2	867.913	256.865	0.000	0.908	513.729	1.000
Intercept	50.397	1	50.397	14.915	0.000	0.223	14.915	0.966
Pretest	1475.822	1	1475.822	436.780	0.000	0.894	436.780	1.000
Group	198.403	1	198.403	58.719	0.000	0.530	58.719	1.000
Error	175.701	52	3.379					
Total	15234.000	55						
Corrected Total	1911.527	54						

Source: the author's calculation

As indicated by the study results, a statistically significant difference was calculated at all levels of the analysis. The experimental group was identified as having benefited more from a CL based approach to teaching the three English prepositions than the control group did from the traditional instructional approach. In other words, not only that the level of progress tested immediately after the instruction was higher in the case of the experimental group, but the overall progress measured by the delayed posttest, which also

included the measure of expected drop in performance over time, was also identified as being at a higher level for the experimental group.

4. Discussion

The study was designed and conducted with an aim of testing the effectiveness of an innovative L2 teaching approach that incorporates some of the main principles of CL. Even though the results suggest an advantage of a CL based approach over the traditional L2 teaching approach, an L2 field within which the study was conducted is far too narrow to make any general claims. However, there have been other studies with intriguing results that cover other issues in L2, such as articles (e.g., Verspoor & Huong, 2008), grammatical aspect (e.g., Neimeier & Reif, 2008), verb constructions (e.g., Goldberg, 2006), modal verbs (e.g., Robinson & Ellis, 2008) or conditionals (e.g., Dolgova Jacobsen, 2016), to name just some of them. All these studies indicate that CL has a substantial potential of being successfully applied to many areas of L2 teaching and learning.

Apart from the fact that a growing body of research in the field of applied CL has delivered encouraging results, it is important to note that most of the studies were carried out with advanced L2 learners at an approximately similar level of L2 mastery. In the same vein, one of the pressing issues over the course of the present study was that the participants' level of English proficiency was not even close to uniform. At the time of the study, they all started a B2 level course at the faculty, and they all had a history of L2 English learning but there are no eliminatory criteria upon course entrance and the only option for students who choose English as a foreign language is a course at B2 level. Despite this unfavourable research condition, the study was conducted with randomly chosen groups of participants that were not previously scanned for their L2 proficiency. This was decided because L2 learner groups of this kind are, more often than not, a pedagogical reality.

Another major concern in the study was the educational background of the participants. What is meant by this is that none of the study participants had any special linguistic education prior to the study, so it was not certain how they would react to an approach to L2 teaching that is in many ways different from what they had been accustomed to. The participants were presented with quite a few linguistic concepts that were completely alien to them while they also had never been involved in a deeper linguistic analysis of any sort. Even so, the participants appeared intrigued by the novel approach, and, in the end, as the study results suggest, a CL based approach to teaching the three English prepositions delivered better learning outcomes than the one relying on traditional linguistics.

However, it would not be reasonable to claim that any new instructional approach to L2 teaching would serve as a magical shortcut in language learning. Instead, a sensible recommendation that a quite elaborate theoretical and empirical CL research communicates is that a carefully planned and designed incorporation of CL elements into certain parts of L2 teaching practice could facilitate a better overall understanding of how L2 system works.

Conclusion

The main idea of the study was to investigate the effectiveness of a CL based approach to teaching L2 prepositions in contrast with the traditional approach. Stemming from the scientific assumptions listed in the theoretical part of the paper, there are several potential benefits of a CL-based instructional approach that could facilitate L2 learning. These include a better understanding of how language is structured, raising awareness of the metaphorical nature of language, and recognizing that meaning of lexical units is motivated and not arbitrary. All of this is to promote a more in-depth L2 knowledge, easier and faster memorization, and long term-retention. According to the study results, these goals were achieved as the participants in the experimental group exhibited a higher level of performance on both posttests, higher rate of progress and a lesser drop in performance over time.

The intersection of cognitive and applied linguistics seems to offer plenty of avenues for researchers in the field and L2 teachers alike. A CL theory of language has long become one of the major linguistic trends but its systematic application in the L2 classroom is still awaiting. Even the research studies in the field of CL do not extend the timespan of several months. The reason for this may be the lack of textbooks and other materials compatible with CL and ready for strategic and continual use in classrooms. It is also a fact that teaching a foreign language in line with CL principles takes up a substantial amount of time and energy but the potential benefits regarding teaching and learning outcomes might outweigh the difficulties.

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