

## Vietnamese Students Learning the Semantics of English Prepositions

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### ABSTRACT

Prepositions are significant in sentences because they are used as markers to join words and phrases into a sentence. Teachers usually teach prepositions by providing students with explanations about the usage of prepositions and then gives examples as illustrations. These examples are often accompanied by vivid pictures. This method, however, does not provide students information on how to analyze the different senses of prepositions. This current study, thus, aims to explore the effectiveness and students' opinions of new pedagogical instructions on ten English prepositions, namely *above*, *among*, *at*, *behind*, *beside*, *between*, *in*, *in front of*, *on* and *under*. The research design involved a quasi-experimental design adopting pretest-posttest between-group research. Out of 95 students who volunteered to participate in the study, 38 participants were selected. They were divided into two groups for the new cognitive linguistic approach and traditional instructions. Pretest and posttest were used to discover the participants' improvements. The participants' opinions of the cognitive treatment were also investigated. The findings illustrate that the group that was treated with CL-based instructions outperformed the traditional group in the posttest although they gained a comparable mean score in the pretest. Most participants also provided positive responses to the new treatment. The findings suggests that cognitive treatment could be employed to assist students in improving their understanding and retaining the metaphorical meanings of the prepositions.

**Keywords:** teaching prepositions; metaphors; English language teaching; image schemas

### INTRODUCTION

Prepositions play a significant role in language as they join words and phrases into a sentence. However, how to teach prepositions effectively is a big concern due to their inherent difficulties (Fang, 2000). Firstly, prepositions are clear-cut examples of polysemy; one preposition used in different contexts may have several different meanings. Oxford Advanced Learner's Dictionary states even more than 18 meanings of the preposition *in* (Hornby & Wehmeier, 2005). In addition, there is an overlap between prepositions in use; that is, one preposition can replace another with a slight difference in meaning. For example, the expressions *in the school* and *at the school* are both considered correct in some contexts. Another common characteristic of prepositions is they are multi-functional. For instance, the preposition *in* can be classified as one of both spatial and temporal relations, as in *in the world* and *in the 20<sup>th</sup> century* respectively.

The existing instruction of prepositions in many countries in the world is that the teacher provides students with explanations of the usage of prepositions and then gives examples as illustrations accompanied by vivid pictures. Students are finally required to do exercises as drills. However, not only does this method facilitate unstable marginal improvements among students since they do not have opportunities to analyze different

senses of prepositions to profoundly comprehend them, but they also fail to gain knowledge by simple memorization and have no circumstances to synthesize their existing understanding with the target input (Cho, 2010, pp. 267-269 & Ausubel, 2000). Students, as a result, show low gains of prepositions since the isolated items in memory do not carve a long-term memory.

Although English prepositions are considered complicated to learners, cognitive linguists assert that the meanings of prepositions can be represented in a form of symbols, which can be applied in teaching prepositions as they show the relations of things and/or people. A teaching method based on Cognitive Linguistic (CL) approach has been brought into consideration. CL considers language as symbolic as meaningful in virtues of both lexicon and grammar. The so-called symbolic theory derives from the symbolic nature of language, which can be employed to teach prepositions (Langacker, 1987, p. 12; Talmy, 1988).

This study hopes to extend the previous relevant studies on applying the cognitive linguistic (CL) approach to teaching English prepositions. Song, Schnotz and Juchem-Grundmann (2015) did a quasi-experimental study on teaching the three prepositions *in*, *on* and *at* in Germany. Tyler, Mueller and Ho (2011) conducted a study on teaching the three prepositions *to*, *for* and *at* to 14 English learners who were Italian. Although, these studies were conducted in different countries, they were considered relevant references for this current study because they were all done on students who learned English as a foreign language and their findings proved positive. This current study intended to measure the impacts of CL-based teaching on learners' understanding of the ten prepositions, namely *above*, *among*, *at*, *behind*, *beside*, *between*, *in*, *in front of*, *on* and *under*.

The findings of the present research can provide an insight into the effective instruction of prepositions the teacher should present. In addition, curriculum designing and textbook writing will be benefited in terms of providing appropriate lessons and tasks to assist students in mastering English preposition. The accomplishment of the study will shed light on effective teaching of the aforementioned word class, and in turn help students with learning English prepositions successfully. The study may contribute to the feasibility of CL-inspired approach to teaching other language phenomena in Asia and the world.

## LITERATURE

### BASIC CONCEPTS IN COGNITIVE LINGUISTICS

The theory of CL has entered the field of second language acquisition and foreign language teaching, with a vast number of theoretical and practical concerns with discovering the relationship between human language, the mind and socio-physical experience. Although findings have suggested that the usefulness of applying cognitive linguistics to ELT has a facilitative effect on language learning in the classroom (Pawlak, 2006, pp. 9-10), doubts concerning these applications still exist. The remaining undiscovered areas of pedagogical applications of CL extensively remain a long objective (Langacker, 2008, p. 66).

CL is a unification of various linguistic theories and models based on the related beliefs in numerous language phenomena, among which the basic theories, for the practical purposes of this paper, are symbolization, image schemas, domains and conceptual metaphor (Langacker, 1999, pp. 13-18).

In CL, language is regarded as a continuum of symbolic complexity (Langacker, 1999, p. 18). Accordingly, one of the hypotheses of CL is that lexicon, morphology and syntax are not treated as distinct subsystems of language, but are multifaceted. For examples, prepositions, which are considered functional markers or linkers without distinct meanings by

some other schools of linguistics, are believed to have clearly-defined meanings in CL (Chomsky, 1981, p. 50; Langacker, 1999, p. 18). The following distinct examples can illustrate the meanings of the preposition *in* (Lee, 2001, p. 19):

- (1) *the cat in the house*
- (2) *the bird in the garden*
- (3) *the flowers in the vase*
- (4) *the bird in the tree*

In (1) and (2), the preposition *in* designates a prototypical relationship between *the cat* and *the house* in which *the cat* is entirely inside the container *the house*. Example (2), (3) and (4) describe a less prototypical relationship slightly differently. In particular, example (2) shows that as the container (*the garden*) is not wholly bounded. In (4), some part of *the flowers* is not inside the container *the vase*. In the final example, it is significant to construe the tree as a three-dimensional containment with the ends of its branches as the boundaries to make sense of relationship between *the bird* and *the tree* as a container. In brief, CL views prepositions as semantic units in which some use of a particular preposition is prototypical.

Also, cognitive linguistic approach places an emphasis on the image schema, which is a recurring structure in humans' cognitive process in which patterns of understanding is formed from linguistic experience in interactive contexts (Lakoff & Johnson, 1980). As to make a distinction in the meanings of the ten prepositions taught in this current study, the landmark schemas (Fig. 1) used in the handouts and presentation files to facilitate students' visualization should be three-dimensional (Herskovits, 1986).

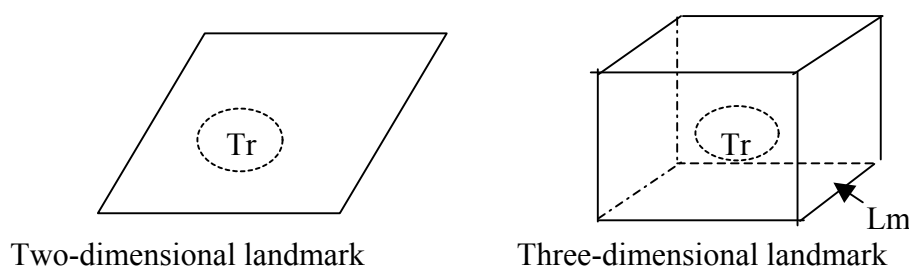


FIGURE 1. Image schema for *in* (Adapted from Herskovits, 1986)

As a usage-based approach, cognitive linguistics implies that language teachers can use symbols to express the meanings of the target items during teacher-fronted explicit instruction (VanPatten, 2002). Pedagogically, when the lesson aims at accuracy, it may be necessary to take advantage of this kind of instruction. It is also significant to note that CL believes that the use of a linguistic symbol related to an intended meaning forms a percept and then in turn a concept during mental processing. Human cognitive abilities synthesize information received into a mental image which is first established in a short-term memory and then a long-term memory in a particular condition. It is significant to facilitate the integration of the new input with learners' existing knowledge from their prior experience (Evans & Green, 2006, p. 7; Langacker, 1999, pp. 91-99). In a sense, CL places a high emphasis on visual perception in everyday experience, from which images find some way to enter the mental process because a picture can help tell us more information than a word. Then, images of a relevant area are matched to establish an organized schema.

Regarding the pedagogical applications, CL implies that the picture that the teacher uses in instruction should not be vivid, but symbolic for a number of reasons. In the first

place, symbolic units can even describe abstract concepts like “love” and “hate”. In the second place, symbols can represent quite general things; that is, when viewing a symbol, learners can generalize things in common. Finally, these symbols matching with learners’ available experience can form a long-term memory (Johnson, 1993; Schnotz & Banner, 2003).

Another theory that is directly related to this research is the Theory of Domains. A domain, or a frame, in Langacker’s (1987, p. 147) definition is an inventory of conventional linguistic units equated with conceptualization. In particular, in order to correctly express spatial concepts, learners need to have certain understanding of the surrounding, particularly spatial relationships of objects to use appropriate one in a certain context. Spatial relationships are so basic that humans use spatial domain to structure other domains (Lee, 2001, p. 18). Radden and Dirven (2007) proposes networks of meanings of prepositions from physical space to mental space. For example, the prepositions *in*, *on* and *at* can be used with both spatial meanings and abstract meanings or metaphorical meanings (Table 1).

TABLE 1. Cross-domain transfer of prepositions (Adapted from Geeraerts & Cuyckens, 2007)

Spatial domain		Abstract Domain
<i>in</i> the box	—————→	<i>in</i> my opinion
<i>on</i> the desk	—————→	<i>on</i> the telephone
<i>at</i> school	—————→	<i>at</i> rest

In Table 1, abstract meanings are also referred to as metaphorical meanings. A metaphor is defined as a figure of speech that describes a subject by comparing it with another. Different from the notion of figurative metaphor, conceptual metaphor theory in CL places an emphasis on an assumption that human ideas themselves are primarily metaphorical in nature. In everyday communication, people are exposed to and use metaphor as a tool to understand and express their own opinions. Conceptual Metaphor Theory hypothesizes that human understanding and use of metaphor derives from non-metaphorical understanding in that the non-metaphorical part is responsible for expressing concrete concepts in the spatial and/or temporal domains and the abstract concepts can be expressed through the abstract domain by metaphor (Evans, 2007, pp. 75-138). Sohrabi and Pirnajmuddin (2017) discovered that metaphors were also commonly used in the world outside poetry.

As a whole, image schemas, domains and metaphor together are responsible for learners’ understanding and use of language. The spatial domain in this research is the source domain which projects structure onto the target domain (abstract domain). Spatial prepositions, from a closer look, can be acquired in the spatial domain first and then are transferred onto the abstract domain (Evans, 2007, p. 53). Accordingly, learners acquire non-metaphorical use of prepositions first in the spatial domain or temporal domain and then they transfer onto the abstract domain where students can use prepositions metaphorically in a certain circumstance. For example, the expressions *in love* and *in my opinion* are examples of spatial prepositions transferring from the spatial domain to the abstract domain.

### PREVIOUS STUDIES

There are many studies on applying cognitive linguistic approach to teaching English items. Most of them, which are considered to be relevant references for this current study, have been conducted on EFL adult students.

Song, Schnotz and Juchem-Grundmann (2015) conducted an experimental study entitled “A cognitive linguistic approach to teaching English prepositions *in*, *on*, *at*”. In this

study, Song delivered a sentence-completion pretest and delayed posttest. The treatment lasted for three weeks. In the first week, the lesson focused on the spatial domain, incorporating all three prepositions. A week later, a lesson on the three prepositions in the temporal domain (traditionally called prepositions of time) was delivered and during the third week, the linguistic examples for the abstract domain were taught to the two groups: Experimental Group (under cognitive treatment) and Control Group (under rote learning treatment). The conclusions showed the trial group performed better than the control group in the posttest.

Hoomanfard and Meshkat (2015) conducted a study employing the cognitive process in writing in a second language. A cognitive process questionnaire was administered to the participants. The findings were in line with the previous research that cognitive processes could help improve second language writing and benefit second language teachers, curriculum designers and test makers.

Jafarigoha and Khanjani (2014) attempted to explore the effects of cognitive treatment on sixty Iranian EFL learners' reading competence. The participants were given texts for reading. They were also interviewed at the end of the study. The study had implications for language teaching and curriculum development that cognitive treatment really helped the participants improve their performance. Also, EFL teachers should employ cognitive reading strategies in the classroom.

Bielak and Pawlak (2013) applied cognitive grammar to teaching English tense and aspect. 50 participants were randomly divided into three groups: the cognitive, traditional and control. They used pretest, posttest 1 (immediate test) and posttest 2 (delayed test) to measure the effectiveness of the treatment. The study took place for 4 weeks and the findings showed the cognitive group improved its knowledge of the target items.

Similarly, Tyler, Mueller and Ho (2011) did an experimental study entitled "Applying cognitive linguistics to learning the semantics of English prepositions *to*, *for* and *at*" to 14 participants. The study was conducted with a text-completion pretest and posttest. On the first day, the preposition *to* was taught to the participants. Then, on the second day, the prepositions *for* and *at* were instructed. In each of the class sessions, the teacher-fronted 50-minute instruction was followed by productive tasks: pair work and sentence writing with the preposition under a headline. In general, the results of the statistical tests indicate the participants experienced significant gains in their understanding of the three prepositions.

Regarding the local context, Huong (2005) applied cognitive grammar to teaching English articles to Vietnamese senior English-majors at Can Tho University. Although these participants were considered to be at the advanced level, they made a large number of errors in the pretest. They were randomly divided into two groups of about 30 participants each. After the treatment period of 4 weeks, the experimental group demonstrated more considerable retention of articles than the traditional group.

Inspired by the Theory of Conceptual Metaphor in cognitive linguistic approach, Condon and Kelly (2002) tested the efficacy of teaching phrasal verbs to EFL learners in their quasi-experimental study with a hypothesis that words and phrases are just gained in the spatial domain (the source domain) and then they transfer to the abstract domain (the target domain) where words and phrases are used with figurative meanings. Over a period of 8 weeks, the experimental (cognitive) and traditional groups were instructed on 28 phrasal verbs involving *up*, *down*, *in* and *out*. For the cognitive group, instruction was accompanied by simple diagrams indicating movement from inside a container to outside. Participants took a fill-in-blank pretest, immediate posttest and delayed posttest. The cognitive group outperformed the traditional group on both the immediate test ( $p < 0.01$ ) and the delayed test ( $p < 0.05$ ). Condon and Kelly (2002) concluded that abstract visuals provided adult learners an important aid in understanding the contribution of the spatially based verb particles and their

extended meanings. Also, adult learners particularly benefit from explicit instruction with phrasal verbs.

There is no doubt that Song, Schnotz and Juchem-Grundmann (2015), and Tyler, Mueller and Ho (2011) conducted experimental studies on applying cognitive linguistic approach to teaching English prepositions in EFL contexts. However, their studies were limited to only the 5 prepositions *in*, *on*, *at*, *for* and *to*. Furthermore, in these quasi-experimental studies, the prepositions were first taught with spatial meanings, temporal meanings and then metaphoric meanings. However, Evans (2007, p. 53) believes that vocabulary can transfer from the spatial domain directly to the abstract domain. This current study is an attempt to expand these previous studies and teach the ten prepositions *above*, *among*, *at*, *behind*, *beside*, *between*, *in*, *in front of*, *on* and *under*. Also, the target items were taught with a focus on the spatial and then abstract domains. Another motivation for this current study was that of all the related studies, Huong's (2005) research was conducted on Vietnamese students. However, this study did not apply the ITPC Model to teaching and conceptual metaphors of the target items were not taught in the classroom. Other known studies, although considered related references, were conducted in European community and suggested that the application should be repeated to confirm the effectiveness of the approach.

## METHODS

### INSTRUMENTS AND PARTICIPANTS

This was a quasi-experimental design adopting pretest-posttest between-group research. This current study had a great interest in applying the ITPC Model in constructivism since it was supposed to improve students' achievement by engaging them in the learning process and considers that representational symbols in instruction might influence the mental process more directly than text, while text may impact propositional representation more than graphics (Mayer, 2005 & Schnotz, 2005).

This model was discussed and applied by Song, Schnotz and Juchem-Grundmann (2015). However, productive tasks were not applied. Harmer (2009) believes that there should be tasks for productive skills when instruction is applied. This current study required participants to perform two main productive tasks, including sentence-writing task and communicative task after the teacher's instruction and exercise. The ITPC Model implies that information from auditory and visual channels do not merge in working memories, but long-term memories. It is significant to let learners to access both sources of information in a short-term treatment. Recent studies applying CL-inspired teaching have been paying more attention to the importance of productive tasks in addition to teacher-fronted instruction (Bielak & Pawlak, 2013, pp. 89-123).

A university Ho Chi Minh City, Vietnam, was chosen as the place to conduct this current study on account of its suitable conditions. Firstly, the new enrollees here only needed to take 4 on-campus required courses in the first semester, each of which took only 4 hours a week. Therefore, the voluntary participants had time to participate in the research as an extra course. Secondly, they were not required to learn English and none of the 4 courses was instructed in English in this semester, which might prevent the incomparability of out-of-class exposure to a certain extent. All of these conditions could secure the reliability of the findings.

In order to find out how much CL-based approach improved students' knowledge of the prepositions, a pretest and posttest (at a comparable level of difficulty) were delivered to the two groups. The tests were of the same format: three sections of 10 items each. The

pretest and a pre-questionnaire were delivered before the treatment. The pre-questionnaire investigated potential participants' regular out-of-class exposure to English language.

The lesson handouts were delivered to the participants prior to the start of each lesson to prevent the participants' preview before the class and PowerPoint presentation files were used by the teachers in the classrooms during the study. A quick feedback form (in Vietnamese), attached to the posttest, investigated 2 main concerns: participants' out-of-class exposure to English and any unwanted matter happening to them during the study. The two groups did the same pretest and posttest, did the same exercises and learned with the same examples in the handouts and presentation files. The only difference between the two groups was the instructional treatment.

### PROCEDURE

Before this study, teacher training sessions and pilot study were administered. The pretest and posttest were given to a group of EFL teachers considered to be at the advanced level of proficiency for proofreading. Minor changes were made based on the teachers' and learners' comments. After that, the voluntary teachers observed the researcher's cognitive and traditional treatments in his classes. After the pilot study, minor changes were made to student handouts, presentation files and performances as some of the students claimed that they cannot make sense of some language items and the teachers' language complexity. Some wanted more time for instruction. All these participants were not involved in the main study. Results from the pilot study were not subject to data analysis of this study.

95 first-year Vietnamese students volunteered to participate in the main study in response to the researcher's announcement. They experienced the same selection process as in the pilot study. Although they were considered to have a comparable level of proficiency, their pretest scores varied greatly. After a careful consideration, 38 participants within a range of 9 to 11 correct answers out of 30 were selected for the main study. However, more participants registered for Thursday class (Traditional Group), but finally 2 participants agreed to transfer to Wednesday class (Cognitive Group) so that each class had 19 participants finally. The total mean gains by the Cognitive Group and Traditional Group were 9.89 and 9.84 respectively. Regarding the longitudinal conditions, the participants were informed right after the pretest that they should not have any out-of-class exposure to English during the study of 4 weeks. Also, the participants were advised to talk to the researcher if there should have been any unwanted matter with them during the study. These concerns were investigated in a quick feedback form attached to the posttest to determine the reliability of the findings. 2 female full-time in-service EFL teachers, aged 24-26, voluntarily served as the teachers to the two groups. They both had a master's degree in TESOL, an IELTS certificate of band 7.0 and experience of 2-3 years in ELT.

### THE TREATMENTS

Each group in this current study met once per week for two weeks (5 prepositions/ session), 80 minutes each time. All of these participants had already learned spatial meanings of the prepositions. The metaphorical meanings of the prepositions *above*, *among*, *at*, *behind*, *beside*, *between*, *in*, *in front of*, *on* and *under* were taught. Right after the last session finished, the participants were delivered the posttest with a questionnaire. Each class session in both groups was composed of five main activities: warm-up, teacher instruction, written exercise and productive tasks (1 sentence-writing task and 1 speaking task). The speaking task was mainly descriptive. The length of each activity in both groups was comparable.

#### TRADITIONAL TREATMENT

The instruction was mainly direct, explicit and meaning-focused in that the teacher first asked the participants to match the pictures provided with the metaphorical meanings of each of the prepositions *above, among, at, behind, beside, between, in, in front of, on* and *under* (five prepositions instructed per week). Participants were then required to complete sentences (with prepositions) describing the pictures. Finally, the participants were required to do the written exercise. The teacher also required the participants to choose a topic for speaking (with focus of using prepositions taught) and then individually describe a picture given in the form of writing.

#### COGNITIVE TREATMENT

For the Cognitive Group, the teacher employed symbols in explaining the meanings of the prepositions. The teacher instruction was meaning-based (VanPatten, 2002, pp. 6-7) and the items were taught separately as proposed in the Processability Theory (Pienemann, 2007, pp. 137-154). As cognitive linguistics is a usage-based approach, it highly evaluates the teacher-fronted instruction in which the teacher should relate the new input to learners' existing knowledge with symbols. Cognitive linguistics also postulates the transfer of prepositions from the spatial domain to the abstract domain, where prepositions can be used with metaphorical meanings. That is, the participants' knowledge of the spatial meanings of prepositions should be activated prior to learning their metaphorical meanings. This is also in line with another assumption made by cognitive linguists that all language items are meaningful and the teacher should apply teaching for meaningful learning in the classroom (Evans, 2007, p. 53).

As these students have already learned spatial meanings of the target prepositions, the teacher began by activating the participants' existing knowledge of the spatial meanings of the prepositions learned. Then, the teacher provided students with sentences in which each intended preposition was used and the image schema was finally given. Afterwards, the participants were given time to make examples so that the teacher could check the participants' understanding. After the instruction time, the participants were required to do the written exercise in the handouts. Productive tasks (sentence-writing task and speaking task) were also applied finally.

### FINDINGS AND DATA ANALYSIS

#### EXPERIMENTAL RESULTS

The present study was interested in the use of SPSS to process collected data that were computed. Mean scores and Standard Deviation within and between groups were also looked into, accompanied by individual gains in both spatial and metaphorical meanings. Participants' gains were compared to find out Significance to answer the research questions.

As can be seen from Table 2 and Figure 2, the Cognitive Group significantly outperformed the Traditional Group in the posttest although their mean scores from the pretest were comparable. In particular, the mean scores gained by COG and TRAD were 14.89 and 12.0 respectively. In other words, although both groups improved after the treatment, the scores of COG rose more sharply than TRAD; COG improved by 5 points while TRAD improved by 2.16 points. The increases in the scores of both groups were of significance,  $p=0.00$ .



TABLE 2. Means and standard deviations for both groups

	COG (n=19)		TRAD (n=19)	
	Mean	SD	Mean	SD
Pretest	9.89	1.524	9.84	1.068
Posttest	14.89	3.16	12	2.357
Gain	5	2.809	2.16	1.951

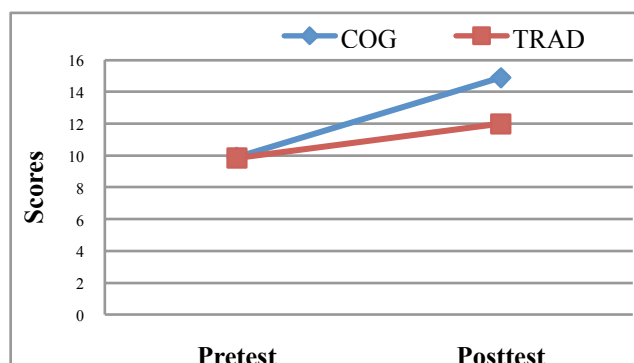


FIGURE 2. Comparison of both groups' gains in metaphorical meanings

Figures 3a and 3b demonstrate the range of gains in metaphorical meanings by individuals in both groups from the pretest to the posttest. More specifically, the gains by COG ranged from 1 to 14, but those by TRAD ranged from 0 to 6. In fact, four participants in TRAD showed no improvement after the study. Nevertheless, all COG individuals illustrated an increase in their scores from the pretest to the posttest. Also, the COG participant's highest individual gain was 14 points in comparison to 6 points as the highest individual gain by the TRAD participants.

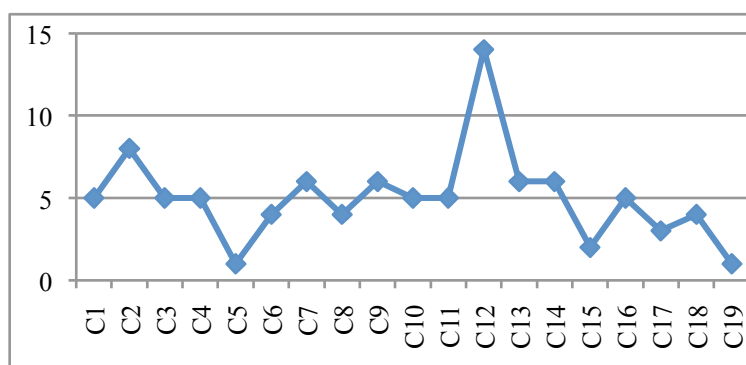


FIGURE 3a. COG individual gains in metaphorical meanings

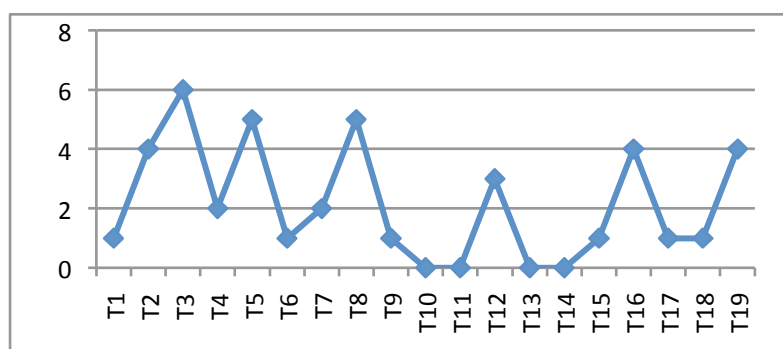


FIGURE 3b. TRAD individual gains in metaphorical meanings

Regarding statistical reliability, Cronbach’s alpha was used. The analysis shows that the reliability of test scores of both groups and each group, called COG and TRAD, were internally consistent. In details, the analysis shows that Cronbach’s alpha of COG and TRAD was >0.8 and >0.9 respectively. That is to say, the findings from this study were really reliable.

### PARTICIPANTS’ RESPONSES

The participants’ responses to the pre-questionnaire and post-questionnaire were divided into two main parts. Their responses to Part 1 of each of the questionnaires were put into SPSS for analysis and then were compared. Their responses to Part 2 were mainly thematically analysed. The analysis of Part 2 of the pre-questionnaire revealed COG and TRAD were at a comparable level of motivation for joining the study, with a mean score of 4.38 and 4.44 respectively. The independent samples t-test between the motivation levels of two groups showed that there was no significant difference ( $p=0.258$ ). They also responded that they did not regularly have out-of-class exposure to English language use. The type of instruction which they had received before this study was based on verbal explanations. Also, they had taken courses in English as required by the high school curriculum. Regarding their out-of-class exposure during the study, one COG’s participant reported that he came into a foreigner and gave directions. Another participant responded that she watched a 90-minute American movie, but it was dubbed into Vietnamese. Similarly, a TRAD’s participant revealed she read an online article for about 15 minutes and a further participant responded that he conversed with a foreigner at a coffee shop for approximately 20 minutes. In a word, both groups did not have significant out-of-class exposure to English language use.

The participants provided positive responses in that they believed the cognitive treatment helped them improve their understanding and use of metaphorical meanings of the prepositions. Also, they responded that the class activities as well as the instruction were interesting and appropriate (Table 4). The use of image schemas, in particular, was more effective in teaching spatial meanings than metaphorical meanings. Finally, the application was assumed to be applied widely.

Tables 3 and 4 describe COG’s participants’ responses to the CL-based treatment. All of them highly appreciated it. Most of the mean scores was above 4.0, except for the statement that the use of image schemas clearly presented the metaphorical meanings of the prepositions. They also evaluated CL-based instructions more highly the previous instructions they had received (mainly based on verbal explanations, as revealed by the participants to the pre-questionnaire). In addition, all of the participants believed the CL-based treatment was appropriate. The mean scores for the appropriacy and interest of the treatment and effects of the treatment were 4.00 and 4.31 respectively. Findings were proved reliable; Cronbach’s alpha of the first and second clusters was 0.73 and 0.79 respectively. Independent samples test shows that their gains were significant,  $p=0.00$  (2-tailed).

TABLE 3. Participants’ opinions of previous teaching of prepositions

No	Statement (n=19)	Mean	SD
1	I liked my previous teachers’ instructions on metaphorical meanings of prepositions (e.g. <i>I depend <u>on</u> my family</i> ).	3.05	0.612
2	My previous teachers’ instructions on metaphorical meanings of prepositions were appropriate.	3.05	0.405
3	My previous teachers’ instructions clearly presented metaphorical meanings of prepositions.	2.95	0.524
4	I enjoyed my previous class activities for teaching metaphorical meanings of prepositions.	2.79	0.419

5	My previous class activities for teaching metaphorical meanings of prepositions were appropriate.	3.16	0.501
<b>TOTAL</b>		3.00	0.291
6	My previous teachers helped me to easily understand metaphorical meanings of prepositions (e.g. <i>I depend <u>on</u> my family.</i> ).	3.11	0.459
7	My previous teachers helped me retain metaphorical meanings of prepositions.	2.95	0.405
8	My previous teachers' instructions on metaphorical meanings of prepositions were effective.	2.95	0.524
9	My previous teachers helped me to be able to effectively use metaphorical meanings of prepositions.	2.89	0.567
10	I would like to continue to learn metaphorical meanings of prepositions under my previous teachers' instructions.	3.11	0.459
11	I believe that other teachers should apply my previous teachers' instructions on metaphorical meanings of prepositions.	3.11	0.459
<b>TOTAL</b>		3.02	0.135

TABLE 4. Participants' responses to the CL-based treatment in comparison with those to previous treatments

No	Statement (n=19)	Post-questionnaire		Gains	
		Mean	SD	Mean	SD
1	I liked the teachers' instructions on metaphorical meanings of prepositions (e.g. <i>I depend <u>on</u> my family.</i> ).	4.53	0.697	1.47	0.814
2	The teachers' instructions on metaphorical meanings of prepositions were appropriate.	4.79	0.419	1.74	0.562
3	The use of image schemas clearly presented metaphorical meanings of prepositions.	3.89	0.567	0.95	0.780
4	I enjoyed the class activities for teaching metaphorical meanings of prepositions.	4.16	0.501	1.37	0.684
5	The class activities for teaching metaphorical meanings of prepositions were appropriate.	4.63	0.496	1.47	0.772
<b>TOTAL</b>		4.00	0.371	1.40	0.503
6	The use of image schemas helped me to easily understand metaphorical meanings of prepositions (e.g. <i>I depend <u>on</u> my family.</i> ).	4.32	0.671	1.21	0.787
7	The use of image schemas helped me retain metaphorical meanings of prepositions.	4.16	0.765	1.21	0.787
8	The teacher's instructions on metaphorical meanings of prepositions were effective.	4.32	0.671	1.37	0.761
9	The teacher's instructions helped me to be able to effectively use metaphorical meanings of prepositions.	4.11	0.658	1.21	0.713
10	I would like to continue to learn metaphorical meanings of prepositions under the teachers' instructions.	4.42	0.607	1.32	0.885
11	I believe that other teachers should apply CL-based instructions on metaphorical meanings of prepositions.	4.53	0.513	1.42	0.692
<b>TOTAL</b>		4.31	0.456	1.29	0.487

## CONCLUSION

This current study was aimed to explore the effects of teaching based on CL, mostly on the participants' understanding of the metaphorical meanings of the ten prepositions *above, among, at, behind, beside, between, in, in front of, on* and *under*. This study also compared the experimental results of the two instructional treatments, namely cognitive and traditional. The findings were in line with previous studies in EFL (Song, Schnotz & Juchem-Grundmann, 2015; Tyler, Mueller & Ho, 2011; Huang, 2005).

Limitations of this kind of quasi-experimental study were inevitable. One weakness was about the selection of participants. More specifically, although extraneous variables that could have taken place during the study were investigated after the treatment, this was done

through the participants' feedback. Also, the treatment was usage-based, followed by productive tasks; however, these follow-up activities were on a basis of sentence making. In other words, language accuracy rather than fluency was the focus. Whether or not the treatment could lead to fluency was not really explored even though productive tasks were involved.

It is obvious from the study that cognitive treatment could help the participants improve their understanding and retain the metaphorical meanings of the prepositions. The application should be repeated several times to ensure its feasibility. Also, those who are interested in applying CL to ELT can conduct studies on other language items.

EFL teachers can apply this treatment in their classrooms. The use of symbols and ITPC Model has proven to be more effective than the traditional pedagogical options. In a small scale, the teacher may be able to adapt the treatment according to the learners' level of proficiency. Information achieved through both visual and auditory channels can help learners retain the input.

EFL learners should also bear in mind that self-study is an issue of concern in that language learning strategies are crucial, which should be somewhat cognitive. Learners can also use symbols when learning and reviewing the lessons of prepositions.

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