# A Cognitive Grammar Approach to Teaching Negative Suffixes in English as a Foreign Language

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**Abstract**

*The present paper sheds new light on teaching the English negative suffixes -free and -less to Kurdish EFL students. To do so, the study weighs two pedagogical models in their instruction: traditional and modern. The traditional pedagogical model is form-focused, therefore it is of limited value for the development of language acquisition. The modern pedagogical model, inspired by Cognitive Grammar, is meaning-oriented, emphasizing semantic aspects of grammatical structures, and improving critical thinking skills. The study highlights the usefulness of Cognitive Grammar principles in grammar instruction. In Cognitive Grammar, the form of an expression is a reflection of its conceptual organization, which represents the specific construal imposed on its content. Based on this, a negative suffix is argued to have not only a morphological function but also a meaning of its own which conditions its behaviour. The practical aim is to implement the construal theory in the teaching of the negative suffixes -free and -less in an online-based classroom. In conclusion, the paper moderately supports teaching through a cognitive meaning-based approach.*

*Keywords: Cognitive Grammar, traditional approach, construal, negative suffixes, online teaching, Kurdish EFL learners*

## 1 Introduction

The theme of the present paper is applying Cognitive Grammar and a traditional form-focused approach to teach suffixal negation in English. Suffixal negation involves the use of the suffixes -less and -free. According to Brown and Miller (2013: 304), negation refers to "the process of denying something that has been asserted". Negation is a morpho-syntactic operation through which the truth of an expression is denied. According to Hamawand (2007: 5), suffixation consists of the attachment of a suffix to a root. The suffix functions as a bound morpheme, whereas the root functions as a free morpheme. The suffix used to build a derivation is called a derivational morpheme. The two suffixes act as rivals. According to Hamawand (2007: 6), rivalry refers to the existence of two, or more, suffixes that attach to the same root and profile distinct aspects of its meaning. They are quite distinct from each other. The derivatives they form represent different conceptualizations of content. This is due to the theoretical position that all language elements have semantic values which motivate their linguistic behavior. Meaning differences between linguistic pairs are attributable to rival suffixes. Each form is associated with a distinct meaning.

To spell out the rivalry between the two negative suffixes, the study weighs two pedagogical models in their instruction: traditional and modern. In the traditional pedagogical model (TRAD), teaching is based on the direct transmission of knowledge by the teacher, rather than guiding students to create their knowledge. In this way, the students act as passive recipients of the information transmitted to them. While teachers are responsible for transmitting knowledge, students must memorize it through repetition. The main tool that students are expected to use is memory, rather than exploration and experimentation. To check whether or not the students have memorized the knowledge, teachers' focus is on external validation through different types of tests. Relying solely on memory leads to a total lack of innovation in the educational process. In addition, most of the knowledge acquired during the educational process is forgotten in a very short time by the students. In this way, students do not develop critical thinking, problem-solving, and decision-making skills. Therefore, the traditional pedagogical model is an inefficient way to acquire knowledge as fundamental aspects of learning such as curiosity, innovation, or discovery are left out.

In the cognitive pedagogical model (COG), teaching emphasizes creativity, which is a great way to learn. Creativity is the fuel that sparks innovation. In this way, students are motivated to generate new ideas in the classroom and develop critical thinking, problem-solving, and decision-making skills. Teachers are knowledge facilitators. Learning is interactive and collaborative. Students are not treated as the target audience. Instead, they take active participation in the classroom and learning process. In this way, teachers and students work together. Teachers pay more attention to the meaning and function of language. Students are instructed to learn vocabulary through the principle of word formation. In this way, students are guided to learn the connection between the form and meaning of vocabulary appropriately. The main tool that students are expected to use is exploration and experimentation. The main motive of teachers is to help students understand the lesson content and the concepts it contains. A key goal of this model is to provide a cognitive analysis of the subject that is accessible to teachers and to offer evidence that such applications of Cognitive Grammar can form the basis for language teaching materials.

The use of the negative suffixes -less and -free constitutes a considerable problem both for linguistic theory and grammar pedagogy. Theoretically, the problem lies in providing a logical account of characterizing the semantic structure of each suffix, an account that can solve problems related to derivation, multiplicity, and ambiguity. In other words, the problem lies in choosing a model that can be responsive to such problems. Pedagogically, the problem lies in choosing the right model for teaching the suffixes. Teachers are not sure about the best practice in teaching the suffixes and are not aware of the appropriate techniques employed in the teaching process. As for Kurdish learners of English, the problem resides in the use of one negative suffix for another without abiding by any cognitive considerations. It is hypothesized that the difficulty encountered by Kurdish learners of English lies in the inadequate analyses provided by most traditional grammars, on which they rely in the learning process. Accordingly, it could be assumed that Kurdish EFL learners are not familiar with the construal of the negative suffixes -less and -free.

Having identified the nature of the problem concerning -less and -free, three questions are posed before developing a solution.

Is there a significant difference between traditional and cognitive approaches to teaching negative suffixes?

Is the difference attributable to the different strategies adopted by the two pedagogical approaches to teaching?

Could this experiment be delivered online?

To answer the questions above, the research tries out Langacker's (1987, 1991) Cognitive Grammar approach. The reason for choosing Cognitive Grammar is that it offers a new way of describing the structure of language. It considers a linguistic unit meaningful, underlining its contribution to the construction in which it occurs. Language is inherently symbolic and linguistic expressions stand for conceptualizations. Morphology is seen as a collection of meaningful units involving links between form and meaning. It is not a set of rules for the language user to follow. Rather, it is a network in which the language user associates the units with each other in conformity with cognitive principles. The link between form and meaning in complex words is not arbitrary but motivated. The linguistic form of an element is motivated by its semantic organization, thus form and meaning are inseparable. As Hamawand (2007: 22) argues, each negative suffix has a distinctive meaning and therefore has a special role to play in the language. A suffix does not only serve the function of changing a word's speech part but also gives it a certain type of semantic information. In short, a linguistic structure of an expression reflects its conceptual structure.

The paper aims to highlight the usefulness of Cognitive Grammar tenets in grammar instruction, showing how the meanings are organized in human cognition. In Cognitive Grammar, the form of an expression is a reflection of its conceptual organization, which represents the specific construal imposed on its content. Based on this, a negative suffix is argued to have not only a morphological function but also a meaning of its own which characterizes its role. The practical aim is to show how powerful the cognitive tools are in resolving questions concerning the teaching of negative suffixes. In other words, the aim is to show how the cognitive tools are endowed with descriptive and explanatory adequacy. The aim is to find out more closely the role the cognitive model plays in fostering the teaching of English as a foreign language.

2. Application

Participants

A total of 76 university students participated voluntarily in the present study. They come from the two English Departments at the College of Languages and the College of Basic Education at the University of Sulaimani (UOS). The participants were divided randomly into two intact groups: 38 students in the COG group and 38 students in the TRAD group. The male students in both departments form a small percentage (53 female participants and 23 male participants). Due to this, 23 female students were in the COG (Cognitive Grammar based instruction) group, and 30 female students were in the TRAD (Traditional based instruction) group. The participant's average age was between 20-25 years. The English level of the participants is defined between B1 and B2 by the placement test of the Language and Culture Center of the University of Sulaimani. The participants' first language is Kurdish, and all of them learned and studied English as a Foreign Language in school for 12 years in the Kurdistan Region of Iraq. All the participants took morphology lectures in college and were familiar with English negative suffixes.

Targeted Materials

The targeted material and data, in this study, are extracted from a main Ph.D. experiment about applying Cognitive Grammar in teaching English negative affixes to EFL Kurdish students. The material of the slides for the COG group is extracted from Hamawand (2007); Evans (2019); Langacker (2013). Below are selected materials for teaching -less and -free extracted from conceptualization lessons in the main Ph.D. experiment.

Figure 1. Introducing the concept of construal at the beginning of the lesson.

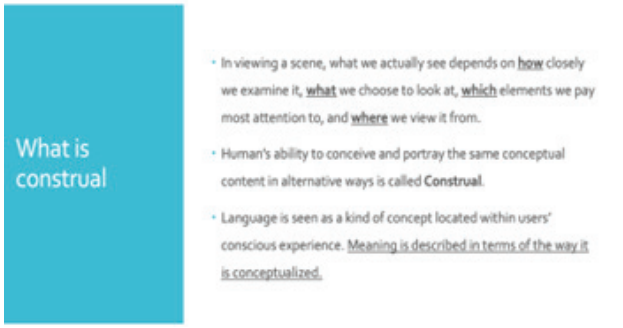



Figure 2. Relating construal to a real-life condition and grammatical structure.

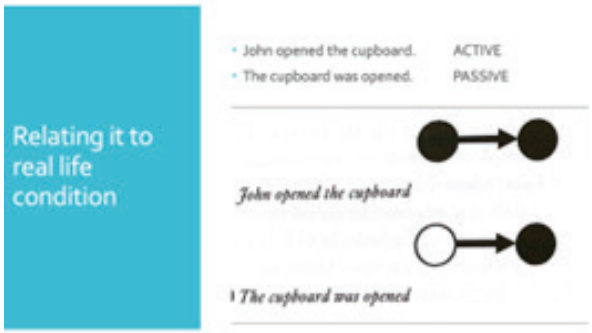



Figure 3. Explicit explanation of the pairs with different construals

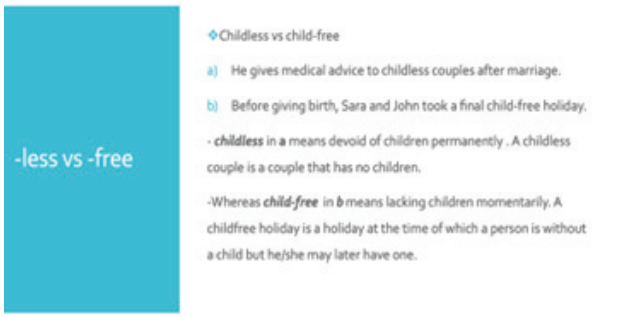



Figure 4. Independent task

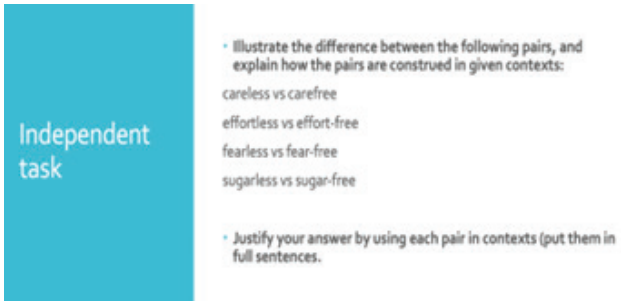
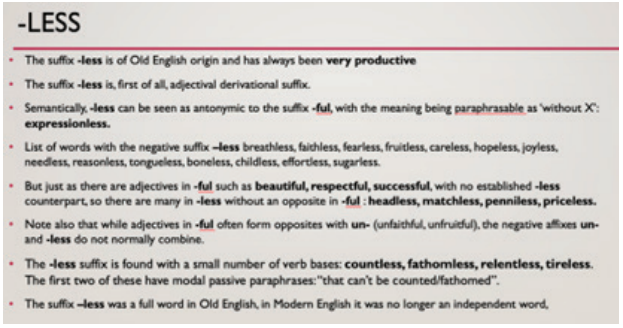


Figure 5. TRAD treatment of the negative suffix -less




The TRAD group's material does not contain a conceptual meaning analysis of the negative suffix -free due to its unavailability. Some traditional dictionaries, grammar books, and morphology texts consider -free and -less as synonymous. Figure 5 illustrates an extracted slide from the TRAD treatment of the negative suffix -less.

For the TRAD's material, the experiment relied on Quirk et al. (1985), Biber et al. (2002), Ingo-Plag (2003); Leiber (2009), Huddlestone and Pullum (2005); and Katamba and Stonham (2006) to explain -less. The former books are suggested and still used in the aforementioned English departments at the UOS. For TRAD's class tasks, we used traditional grammar exercises in the participant's notebooks which are practiced in their morphology classes.

The targeted material of the COG group is inspired by Achard (2004); Tyler (2008); Bielak (2012); Bielak & Pawlak (2013); Langacker (2008b) to implement construal for teaching linguistic meanings as it aids in the explanation of the alternative usages in context. Following this cognitive insight for instruction, the teacher (one of the researchers) used the construal of the suffixed pairs and explained them explicitly because the students need to know how a native speaker conceptualizes each suffixed word and need to know that -less and -free are not synonymous and could not be used alternatively in contexts. Figure 1 explains the notion of construal, first, then Figure 2, is the second slide which explains how construal works in language and how a speaker's mind or a situation could be illustrated when explaining conceptualization. Figure 3, is an example of how the theory of construal could be implemented in EFL class to explain a pair of suffixed words. The learner's attention in this lesson is drawn to the fact that -less and -free are not synonymous. Each highlights a specific conceptualization and conveys the speaker's perspective. It is assumed that this helps to increase the EFL student's knowledge of creativity and flexibility. In the lesson, the negative suffixes are viewed as meaningful in all their uses; the meanings shape the morphological structures of the words to which they attach. The students are encouraged to choose a negative suffix which is based on the way the speaker conceptualizes a situation. The students were reminded that the suffix's use in context serves different needs of communication.

Furthermore, students were encouraged not to memorize, on the contrary, they were motivated to explain, analyze, search, and classify meanings. Figure 4, is an independent task in which students were asked to illustrate, explain, and justify the difference between the construal of the given pairs. For this task, students did not memorize but were motivated to work in groups to negotiate the conceptual meanings. The students found the usage events of the given pairs on social apps. They searched authentic materials such as electronic magazines, YouTube, Instagram, and Facebook posts, as well as tweets by native speakers, and highlighted how English native and near-native speakers use the pairs assigned to them.

In the TRAD treatment group, we explained the grammatical features of the negative suffix

-less, disconnected from general cognitive processes. Some idiosyncratic and mysterious sets of rules are highlighted. A dictionary view of linguistic meaning has been adopted. The teacher explained the meaning of -less with particular linguistic items that are given in dictionary entries. In the TRAD treatment, the teacher did not explain or analyze the multiple meanings of -free and -less in detail. The TRAD's material prevented the teacher to refer to the pragmatic meanings and different conceptual construals of -less and -free which as a result it prevented teaching linguistic creativity and flexibility. Some students in the TRAD's group texted in the zoom chat box and said "we can not understand how -less and -un could be used interchangeably", since in the TRAD's material, -less is grouped with the negative prefixes un-, in-, non-, and a-, they are named as a family of negative affixes, and they mean 'not'. In addition, the productivity of -less is explained, and compared with the suffix -ful as an antonym, see Figure 5.

In the TRAD material, the teacher explained the grammatical features of -less individually. The absence of a pragmatic and construal explanation of the difference between -less and the other negative prefixes, in meaning, demotivated the students because they were memorizing and following rules of arbitrary nature. The main focus was on identifying the grammatical features, and the semantic descriptions were very simple and concrete. A task was assigned to the TRAD's group, whereby the student had to find the grammatical features of the roots that the negative suffix -less is attached to. Another task was about finding whether -less or -free is attached to a list of given roots. The former two exercises are well known in UOS English departments.

Treatments Procedure

The instructional treatments of the sessions for the TRAD and COG groups were delivered in the Zoom meeting application. The reason for selecting online teaching was that the university halls were all closed, and the students of UOS were on strike from 20th September to 20th November 2022. For the sake of experimenting and not delaying it, the students and the researchers agreed on shifting to online classes. On one hand, neither the students nor the researcher faced serious technical issues with online classes. Because of Covid-19, both the students and the teacher have almost a three-year of experience in online learning and teaching. On the other hand, electricity was a problem for some students since the Kurdistan Region of Iraq suffers from a power shortage. The experiment depended on Google-classroom and Zoom applications as a medium of learning and instruction. Google-classroom was used for posting the instructions and the materials, as well as Facebook Messenger, WhatsApp, and Viber applications for communicating with the students. Zoom was chosen at the students' request because it can be installed on various devices, and it is more convenient for those who do not have laptops. Most of the students used their smartphones to participate and did not face any difficulties. The treatments of both groups relied on sharing the PowerPoint presentations on the Zoom app. The teacher used Microsoft Word, as an additional aid, to explain things whenever the students needed extra help.

The pre-test and post-tests and the questionnaire were conducted on Google forms. The teacher shared the pre-test and post-test links on Zoom and assigned 40 minutes to submit the form. The questionnaire was conducted by the same procedure but within 1 hour. The main experiment lasted for 12 weeks; the students were exposed

to the treatments three times a week. Each COG lesson lasted for 55- 60 minutes, whereas the TRAD lessons only took 45 minutes. For the present paper, weeks 9 and 10 were extracted in which construal was introduced. The purpose of taking longer time in the COG group is that the cognitive treatment needs more time to explain. For instance, at first, the students were introduced to the notion of construal in week 9 and its relation to language for approximately 35 minutes. Then, after introducing other negative prefixes pairs, the detailed presentations of the conceptual meanings of the negative suffixes in addition to the tasks were practiced in a new lesson in week 10. Overall, introducing construal and presenting the construal of -less and -free took one session and a half in the COG group. Introducing -less took only 1 session in the TRAD group.

Data Collection and Testing Instruments

The present study adopted pre-test and post-test to assess the effectiveness of implementing Cognitive Grammar and traditional approaches to teach English negative suffixes. The pre-test was conducted in the 1st week of the course before the treatments, and the post-test was conducted 4 days after the 12th week at the end of the treatments, through Google form. The targeted materials of the negative suffixes -less and -free for the pre-test in the multiple-choice question were:

Q.1/a. He gives medical advice to_____ couples after marriage.

a. childless b. childfree

Q.1/b. Before giving birth, the couple should take a final _____holiday.

a. childless b. childfree

The targeted materials for the post-test in the multiple-choice question were:

Q.1/a. He was charged with causing death by _____ driving.

a. careless b. carefree

Q.1/b. She went on a _____ journey to the nearby island.

a. careless b. carefree

The multiple-choice questions aimed at measuring the students' recognition or recall of the targeted negative suffix form and construal (Lado, 1961; Ingram 1985; Farhady, 1994). The students were presented with full sentences that contained a blank and two options from which they had to choose the more appropriate, or best construal. The targeted materials for the tests were reviewed by 5 English native speakers from different nationalities, they were themselves specialists in the ELT and EFL fields, and a committee of Kurdish experts in the field of EFL and ELT, and Cognitive Grammar. In addition, the targeted materials of the lessons were reviewed by some local and international professors in the field of applied linguistics and applied Cognitive Linguistics. The main P.h.D experiment counted on Likerte Scale to design a list of questionnaires as a second tool to elicit qualitative information from the participants. In this paper, only two questions are selected (see tables 17 and 18).

Descriptive Statistics and Results of ANOVA

One-way ANOVA ("analysis of variance") compares the means of two or more independent groups to determine whether there is statistical evidence that the associated population means are significantly different. In our case, there is one dependent variable, which is the total score, with an independent variable that has two levels or groups (pre-test and post-test) or (traditional or cognitive) groups.

Table 1: Means and Standard Deviations for the pre-test for the COG and TRAD groups in the multiple-choice questions 1.a, 1.b

| Groups | Participants Number | Mean | Standard Deviation | Lower 95% | Upper 95% |
|---|---|---|---|---|---|
| COG | 38 | 2.684 | 1.6292141 | 2.1487012 | 3.2197199 |
| TRAD | 38 | 2.211 | 1.7882181 | 1.6227536 | 2.798299 |

Table 1 displays the mean scores and the standard deviations of the pre-tests for the COG and TRAD groups on the multiple-choice test which is designed to measure the student's recognition of the right construal of a given pair of the negative suffixes -less and -free. The table demonstrates that the mean scores of the COG and TRAD groups are 2.684 and 2.211, with a difference in the standard deviation of 1.6292141 and 1.7882181, respectively. The mean scores of the two groups differ from one another but the difference is not statistically significant. In addition, the lower and higher bounds of the 95% confidence interval for the population mean pre-test scores are 2.1487012, 3.2197199, and 1.6227536, 2.798299 for the COG and TRAD groups, respectively. To determine if there is a statistically significant difference between their mean scores, a one-way analysis of variance (ANOVA) is conducted.

Table 2: One-way ANOVA of the pre-test for the COG and TRAD groups in the multiple-choice questions 1.a and 1.b

| Source | DF | Sum of Squares | Mean Square | F Ratio | Prob > F |
|---|---|---|---|---|---|
| Groups (Pre-tests) | 1 | 4.26316 | 4.26316 | 1.4570 | 0.2313 |
| Error | 74 | 216.52632 | 2.92603 | | |
| C. Total | 75 | 220.78947 | | | |

According to the results in Table 2, Prob > F is the p-value for the full model test. Since the p-value of both groups is 0.2313 which is more than 0.05, there are no statistically significant differences between the pre-test mean scores of the COG and TRAD groups.

Table 3: Means and Standard Deviation for the post-test of the COG and TRAD groups in the multiple-choice questions 1.a and 1.b

| Groups | Participants Number | Mean | Standard Deviation | Lower 95% | Upper 95% |
|---|---|---|---|---|---|
| Cognitive | 38 | 3.895 | 0.4525886 | 3.7459747 | 4.043499 |
| Traditional | 38 | 3.316 | 1.0680941 | 2.9647157 | 3.6668633 |

The results in Table 3 show that the mean of the post-test scores for the COG group is 3.895 with a standard deviation of 0.4225886, and the mean for the TRAD group is 3.316 with a standard deviation of 1.0680941. The mean scores of the COG and TRAD are not the same. Furthermore, the population average scores for the COG group's post-test are between 3.7459747 and 4.043499, and there is 95% confidence that the population means for the post-test of the TRAD group are between 2.9647157 and 3.6668633.

Table 4: One-way ANOVA for the post-test of the COG and TRAD groups in the multiple-choice for questions 1.a and 1.b

| Source | DF | Sum of Squares | Mean Square | F Ratio | p-value |
|---|---|---|---|---|---|
| Post-tests (Groups) | 1 | 6.368421 | 6.36842 | 9.4651 | 0.0029* |
| Error | 74 | 49.789474 | 0.67283 | | |
| C. Total | 75 | 56.157895 | | | |

Table 4 shows that the one-way ANOVA to test whether the means of the post-test for the COG and TRAD groups are equal. The mean scores of the post-tests of the COG and the TRAD groups have a significant difference due to their small p-value of 0.0029, which is less than 0.05.

Table 5: Means and Standard Deviations of the pre-test and post-test within the TRAD group in the multiple-choice for questions 1.a and 1.b

| Groups | Participants Number | Mean | Standard Deviation | Lower 95% | Upper 95% |
|---|---|---|---|---|---|
| Pre-test | 38 | 2.211 | 1.7882181 | 1.6227536 | 2.798299 |
| Post-test | 38 | 3.316 | 1.0680941 | 2.9647157 | 3.6668633 |

Table 5 displays the pre-test and post-test mean scores within the TRAD group. The post-test mean score is 3.316 which is higher than the pre-test mean score which is 2.21. In addition, the lower and upper limits of the 95% confidence intervals for the population mean of the TRAD group's post-test and pre-test scores are 2.9647157, 3.6668633, and 1.6227536, 2.798299, respectively. To determine whether there is a statistically significant difference within the TRAD group, a one-way ANOVA is conducted.

Table 6: One-way ANOVA for the pre-test and post-test within the TRAD group in the multiple-choice for questions 1.a and 1.b

| Source | DF | Sum of Squares | Mean Square | F Ratio | p-value |
|---|---|---|---|---|---|
| Traditional Group | 1 | 23.21053 | 23.2105 | 10.6997 | 0.0016* |
| Error | 74 | 160.52632 | 2.1693 | | |
| C. Total | 75 | 183.73684 | | | |

According to the results of the ANOVA test in table 6, there is a significant difference between the pre-test and post-test within the TRAD group in the multiple-choice for questions 1.a and 1.b.

Table 7: Ordered Differences Report of pre-test and post-test within the TRAD Group in the multiple-choice for questions 1.a and 1.b

| Level | Level - | Mean Difference | Standard Error Difference | p-Value |
|---|---|---|---|---|
| Post-test | Pre-test | 1.105 | 0.337894 | *0.0016 |

In addition, table 7 indicates that the mean difference between the pre-test and post-test within the TRAD group is 1.105, and due to their small p-value of 0.0001, which is less than the significant level of 0.05, there is a statistically significant difference within the group.

Table 8: Means and Standard Deviations for the pre-test and post-test within the COG group in the multiple-choice for questions 1.a and 1.b

| Groups | Participants Number | Mean | Standard Deviation | Lower 95% | Upper 95% |
|---|---|---|---|---|---|
| Pre-Test | 38 | 2.684 | 1.6292141 | 2.1487012 | 3.2197199 |
| Post-Test | 38 | 3.895 | 0.4525886 | 3.7459747 | 4.043499 |

Table 8 shows the pre-test and post-test means within the COG group. The mean score of the post-test is 3.895 which is higher than the mean score of the pre-test which is 2.687. In addition, the lower and upper levels of the 95% confidence intervals for the population mean of the cognitive group's post-test are 3.7459747, 4.043499, and those of the pre-test is 2.1487012, and 3.2197199.

Table 9: One-way ANOVA for the Pre-test and Post-test within the COG group in the multiple-choice for questions 1.a and 1.b

| Source | DF | Sum of Squares | Mean Square | F Ratio | p-value |
|---|---|---|---|---|---|
| Cognitive Group | 1 | 27.84211 | 27.8421 | 19.4756 | *<.0001 |
| Error | 74 | 105.78947 | 1.4296 | | |
| C. Total | 75 | 133.63158 | | | |

According to the results of the ANOVA test in table 9, there is a significant difference between the pre-test and post-test within the TRAD group

Table 10: Ordered Differences Report of Pre-Test and Post-Test within the COG group in the multiple-choice for questions 1.a and 1.b

| Level | Level - | Mean Difference | Standard Error Difference | p-Value |
|---|---|---|---|---|
| Post-test | Pre-test | 1.211 | 0.2743017 | *0001.> |

Furthermore, Table 10 indicates that the mean difference between the pre-test and post-test within the COG group is 1.211, and due to their small p-value of <.0001*, which is less than 0.05, there is a statistically significant difference within the group.

Figure 6. Overall Means of the Pre-test and Post-test of COG and TRAD groups in the multiple-choice for questions 1.a and 1.b

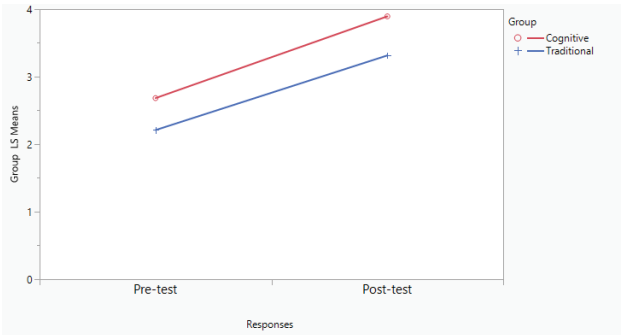



Table 11: Overall Means of the pre-test and post-test between the COG and TRAD groups in the multiple-choice for questions 1.a and 1.b

| Groups | Pre-test | Post-test |
|---|---|---|
| Cognitive | 2.684 | 3.895 |
| Traditional | 2.211 | 3.316 |

According to the results in Figure 6 and Table 11, the mean scores of the COG and TRAD groups moved toward a higher level in the post-tests than in the pre-tests. Within the groups, the mean score of the COG group increased by $\left(\frac{3.895-2.684}{3.895} * 100 = 31.09114\,\%\right)$ compared to its pre-test. The mean score for the TRAD group increased by $\left(\frac{3.316-2.211}{3.316} * 100 = 33.32328\,\%\right)$ compared to its pre-test. Hence, the data of the two experimental groups reveal that both groups improved. The TRAD group has the statistically significant change by 33.32% in the mean scores for pre-test to post-test within the group.

Table 12: The average scores of questions 1. a and 1. b, in the pre-test and post-test of the COG and TRAD groups

| Groups | Average of the Questions | |
|---|---|---|
| | Q1(a) | Q1(b) |
| Pre-test TRAD | 1.263 | 0.947 |
| Pre-test COG | 1.421 | 1.263 |
| Post-test TRAD | 1.842 | 1.474 |
| Post-test COG | 2 | 1.895 |

According to the results in Table 12, in the post-test, the COG group has the highest average score for both questions; the mean scores are 2 and 1.895 for Q1a and Q1b, respectively. Overall, both groups improved in Q1a and Q1b.

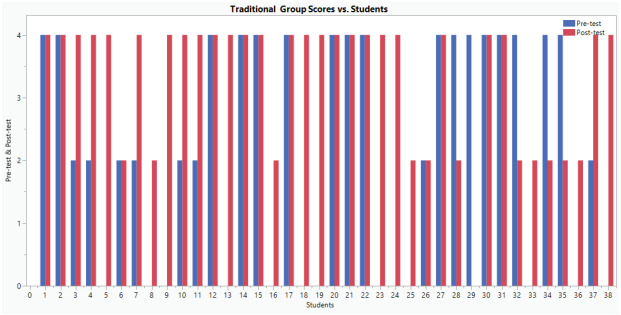



Figure 7: The total scores for the pre-test and post-test of the TRAD learners for Q1a and Q1b

Table 15: Improvement, deterioration, and no change among the TRAD learners for Q1a and Q1b

| | Number of the learners | % |
|---|---|---|
| Improvement by scoring 4/4 points in the post-test | 6 | 15% |
| Scored zero in the pre-test, but 4/4 in the post-test | 8 | 21% |
| Scored zero in the pre-test, but 2/4 in the post-test | 5 | 13% |
| Deterioration by 2 points in the post-test | 4 | 10% |
| Deterioration by 4 points in the post-test | 1 | 2% |
| No change scored 4 on both tests | 12 | 31% |
| No change scored 2 on both tests | 2 | 5% |

Table 15 and Figure 7 present each student's performance between the pre-test and post-test in the TRAD group. As shown, in general, 19 (50%) students experienced gains in their selection of the right construal in the multiple choice questions 1a and 1b in the post-test. Only 4 (10%) students experienced deterioration by 2 points in the post-test and 1(2%) deterioration by 4 points in the post-test. 12 (31%) students scored 4 points on both tests and retained their knowledge, and 2 (5%) students exhibited no change over time on both tests.

Figure 8: The total scores for the pre-test and post-test of the COG learners for Q1a and Q1b

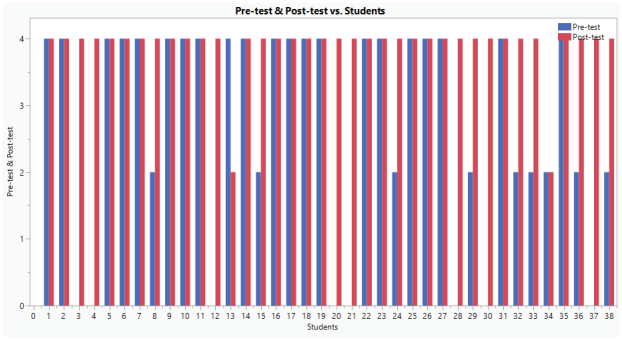



Table 16: improvement, deterioration, and no change among the COG learners for Q1a and Q1b

| | Number of the learners | % |
|---|---|---|
| Improvement by scoring 4/4 points in the post-test | 8 | 21% |
| Scored zero in the pre-test, but 4/4 in the post-test | 8 | 21% |
| Scored zero in the pre-test, but 2/4 in the post-test | 0 | 0 |
| Deterioration by 2 points in the post-test | 1 | 2% |
| Deterioration by 4 points in the post-test | 0 | 0 |
| No change scored 4 on both tests, retained knowledge | 20 | 52% |
| No change scored 2 on both tests | 1 | 2% |

Table 16 and Figure 8, present each student's performance between the pre-test and post-test in the COG group. When the data were analyzed, it was found that 17 students improved in their selection of the right construal in the multiple-choice questions 1a and 1b in the post-test. Only 1 (2%) student experienced deterioration by 2 points in the post-test, and no deterioration by 4 points in the post-test was noticed. 20 (52%)

students scored 4 points on both tests and retained their knowledge, and 1 (2%) student exhibited no change over time on both tests.

Descriptive Statistics and Results of t-test for the Questionnaire

This part presents descriptive statistics of selected questions from the main study's questionnaire list of both TRAD and COG groups. A 5-point Likert scale (1932) is applied to elicit information from the students and to know their opinion about the sessions of the negative suffixes -less and -free. Furthermore, one sample t-test is conducted to examine whether the mean of a population is statistically different from a known or hypothesized value. This study used a one-sample t-test to show whether the students' responses are statistically significant for each selected question, i.e. to test whether the content of the questions was important to the students or not.

Table 17: Descriptive statistics and a one-sample t-test for two questions in the TRAD group

| Sections | Responses scale | | | | | Statistical Indicators | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1s | 2s | 3s | 4s | 5s | Mean | Standard Deviation | t-values | P-value | Ranks |
| **2. How easy and engaging would you rate the tasks/exercises of this lesson?**<br>1. They are NOT easy and engaging at all.<br>2. They are slightly easy and engaging.<br>3. They are moderately easy and engaging.<br>4. They are very easy and engaging.<br>5. They are extremely easy and engaging | 0 | 1 | 6 | 25 | 6 | 3.95 | 0.655 | 37.126 | *0.0001 | 4 |
| **5. How would you rate the following statement: The English negative suffixes are synonymous and they could be used interchangeably/ alternatively.**<br>1. strongly disagree<br>2. Disagree<br>3. neither agree nor disagree<br>4. agree<br>5. strongly agree | 0 | 12 | 13 | 13 | 0 | 3.03 | 0.822 | 22.707 | *0.0001 | 12 |

Table 17 shows the results of the selected questionnaire of the TRAD group from the main experiment. The original questionnaire consists of 12 questions, here questions 1 and 2 are selected for this study. The weighted mean of question one "How easy and engaging would you rate the tasks/exercises of this course's lessons?" is 3.95 with a standard deviation of 0.655. Its p-value is less than 0.05, and it is in rank 4, indicating that the students considered the tasks and exercises to be very easy and engaging. The weighted mean of question two "The English negative suffixes are synonymous, and they could be used interchangeably/ alternatively" is 3.03 with a standard deviation of 0.822. Its p-value is less than 0.05, and it is in rank 12 (having the lowest rank).

Table 18:Descriptive statistics and a one-sample t-test for two questions in the COG group

Table 18 shows the results of the selected questionnaire of the COG group from the main experiment. The original questionnaire consists of 12 questions, here questions 1 and 2 were selected for this study. A one-sample t-test is conducted to show whether the students' responses are statistically significant for each question. The

| Sections | Responses scale | | | | | Statistical Indicators | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1s | 2s | 3s | 4s | 5s | Mean | Standard Deviation | t-values | P-value | Ranks |
| **1. How easy and engaging would you rate the tasks/exercises of this lesson?**<br>1. They are NOT easy and engaging at all.<br>2. They are slightly easy and engaging.<br>3. They are moderately easy and engaging.<br>4. They are very easy and engaging.<br>5. They are extremely easy and engaging | 4 | 1 | 15 | 15 | 3 | 3.32 | 1.042 | 19.607 | *0.0001 | 11 |
| **2. How would you rate your understanding of the construal/ conceptualization of the negative suffixes?**<br>1. I do not understand at all<br>2. I slightly understand.<br>3. I moderately understand.<br>4. I understand in a very good way.<br>5. I understand everything | 2 | 3 | 10 | 16 | 7 | 3.61 | 1.054 | 21.092 | *0.0001 | 10 |

weighted mean of question 1 "How easy and engaging would you rate the tasks/exercises of this course's lessons?" is 3.32 with a standard deviation of 1.042. Its p-value is less than 0.05, and it is in rank 11. The weighted means of question two "How would you rate your understanding of the construal/ conceptualization of the negative suffixes?" is 3.61 with a standard deviation of 0.679 and 1.054, respectively. Their p-values are less than 0.05, and it is in rank 10.

## 3 Discussion

The targeted data for the pre-test and post-test of both groups were extracted from the main Ph.D dissertation. The results of the statistical tests indicate that the participants of the COG and TRAD groups experienced significant gains in their understanding of the two negative suffixes -less and -free over time in each of the tests. The improvement of the two groups followed different patterns though. The results of the mean scores, for the pre-test and post-test, of the within-group in the COG treatment, changed significantly by 31.09%, whereas the results of the mean scores, for the pre-test and post-test, of the within-group in the TRAD treatment, changed significantly by 33.32%. Although the statistical analysis shows a difference between the percentage of improvement in favor of TRAD group, Table 14 reveals that the COG group has the highest average scores of 2 and 1.895 for both Q1a and Q1.b, respectively in the post-test. Furthermore, the total scores for the pre-test and post-test of the COG learners for Q1a and Q1b, in Table 16 and Figure 8 demonstrate that 16 participants improved in general, and 20 of the participants retained their knowledge of the negative suffixes -less and -free in the multiple-choice question (receptive knowledge), and there was only 1 deterioration.

According to the researchers' observation, construal-based instruction assisted in increasing the knowledge of the participant about the form and conceptual meaning of -less and -free. In addition, the t-test results of question two in the questionnaire, with a mean score of 3.61 and a p-value of less than 0.05, demonstrate that students in the COG group understand construal in a very good way. Another factor for the retention could be that the COG's participants have been exposed to -less and -free multiple times, they studied the categorization and the domain of negative suffixes and then the construals of paired suffixed words in context. Although the t-test result of question 1 in table 18 of the COG group shows that 15 (39%) students believe the COG tasks were moderately easy and engaging and 4 (10%) said the tasks were not easy at all, the researcher observed on a daily base that students increased their level of creativity and abided to submit the assignments completely. The cognitive-based tasks (see Figure 4) required the participants to search, illustrate, explain, and justify the correct conceptual meanings of the given pairs with negative suffixes. As could be observed, on the other hand, the t-test result of question 1 in table 18 of the COG group shows 15 (15%) students said the tasks were easy and engaging. Such types of activities are demanding, yet they require repeated exposure to usage events or authentic materials to search for the given pairs.

Following Ruiz Campillo (2007: 17) suggestion, the COG students shared their assignments on the Zoom meeting chat box; the teacher encouraged a discussion and peer reviewing, "making the communicative classroom also a cognitive one does not raise any contradictions. On the contrary, Cognitive Linguistics provides an enhancement, or better still, a product". The students opened their cameras and shared their screens with their peers to show them the ref-

erences for their assignment. Repeated exposure through communication, to morphological units, as the researchers (Langacker, 1987, 1999, 2013; Barlow and Kemmer 2000; Bybee, 2006; Hamawand, 2016;) believe, leads to entrenched construals of the suffixes -less and -free in the mind of the Kurdish EFL student. In addition, increasing the awareness of the foreign language learner that choosing specific linguistic units is motivated by the conceptual content of its form may departure the learner from memorization (Taylor, 2008). Moreover, such types of cognitive-based activities (see Figure 4) would increase the use of authentic material, Wirag et.al (2022) emphasize that "the use of authentic material… is largely being ignored in Applied CL research".

On the other hand, Table 14 shows that students in the TRAD group improved in Q1.a and Q1.b, their average scores are 1.842 and 1.474, respectively in the post-test's multiple-choice question. It is observed that the improvement of the TRAD group is due to the level of the participants which was intermediate, and the memorization of the given words. Moreover, the total scores for the pre-test and post-test of the TRAD learners for Q1a and Q1b, in Table 15 and Figure 2 give different explanations. The total of 19 students improved overall but only 12 retained their knowledge about -less and -free. This improvement could be supported by the t-test results for question 1 in Table 17 with a mean score of 3.95 and a p-value of less than 0.05, which shows that students in the TRAD group found the tasks to be very easy. Figure 5, illustrates as well that TRAD treatment had only one slide about the negative suffix -less and the task was to find out the grammatical features of the given list of words in the slide and memorize them.

In terms of the decline in performance, 5 students, in general, deteriorated over time, and only 2 students did not change at all in the TRAD group. According to the rsearcher's observation, the class was delivered in a form-focused approach to teaching the grammatical features of -less, and this percentage of deterioration could be due to the boredom of some students which was noticed in the last sessions of the TRAD treatment. The researcher observed this result, before distributing the questionnaire, from the students' comments in the TRAD Zoom chat box. In this lesson's Zoom session (see Figure 5), 29 students attended, and 8 out of the attendees commented "how -less and -free could be synonymous and used interchangeably?". The TRAD material, Figure 5, does not have a concrete answer to their question, there are only simple descriptions of grammatical features of -less, as a result, the teacher asked the students to memorize the exceptions and the list of the given words. As evidence of the researcher's observation in class, the t-test results, in table 17, of question two in the TRAD's questionnaire show that 12 (31%) students disagree that English negative suffixes are synonymous, and 13 (34%) neither agree nor disagree. Another factor for the deterioration could be linked to the late online sessions that the TRAD group had. Both COG and TRAD groups had late evening sessions, due to their busy schedules.

The former results of deterioration in the TRAD group and the individual improvement in the COG group could be spotted in similar research such as Kermer (2016). She noticed deterioration in the receptive knowledge (multiple choice task) of the TRAD group in the post-test and noticeable improvement of some individuals in other tasks. However, Beillak and Pawlak (2013) have noticed deterioration in the COG and TRAD groups as well as improvements in the short, delayed, and long run with different percentages.

To sum up and answer research questions 1 and 2, according to the results of the descriptive sta-

tistics of the pre-test and post-test combined with qualitative results of the questionnaire, this study moderately supports instruction based on Cognitive Grammar. Although the statistical results of the within-group proved that both COG and TRAD changed significantly in the post-test, the TRAD group changed by 33.32% and the COG group by 31.09% within-group. However, the average scores of the COG's post-test for multiple questions could be a piece of evidence for the effectiveness of construal-based teaching. Scores of individual members in the COG group for the multiple-choice questions might be another supportive reason for the effectiveness of instruction based on Cognitive Grammar. Further evidence in support of the superiority of construal-based instruction is the results of question two in the questionnaire of the COG group. 23 (60%) students in generally comprehended construal but only 10 (26%) students moderately understood the concept, and 5 (13%) faced some difficulties. Kermer (2016); Beillak and Pawlak (2013); Takimoto (2020) came up with a similar conclusion and called for more in-depth research and further analysis of Cognitive Grammar benefits. Langacker (2008a:66) challenged linguists to confirm the advantages of Cognitive Linguistics notions in EFL classrooms "it remains to be seen whether language teaching will fare any better when guided by notions from Cognitive Linguistics".

This study suggests applying Cognitive principles to EFL classrooms. According to the experiment's findings, construal is beneficial in developing materials and tasks because it improves students' linguistic creativity and flexibility, whereas the traditional account of language as Tyler (2012) states, and as could be noticed in Figure 5, is mostly used by many teachers in the English departments at the UOS, negative suffixes are dealt with as an individual part or as a modular system. For example, -less is not connected with the conceptual meaning, rather its linguistic form is highlighted explicitly and accompanied by traditional tasks.

Through this study, the researcher attempted to show that bringing Cognitive Grammar theories to EFL teaching and learning is an important issue. Developing material through the implementation of the construal approach is beneficial, as Negueruela and Lantolf (2006) shed light on the importance of any linguistic theory that relies on its ability to be implemented in actual classroom instruction. The experiment's conclusion about explicit teaching of construal is in line with Carter's idea (1993) as well, stating that language learning is connected with comprehending a portion of that language. To test the validity of the former suggestions, the teacher applied the theory of construal in an online class explicitly to teach the different construals of the negative suffixes -less and -free to let the EFL Kurdish students understand their conceptual meanings

This experiment was conducted online to contribute to the field of Applied Cognitive Grammar. To answer the third question, the study discovered that such type of experiments in the field of Applied Cognitive Grammar could be delivered online, under certain conditions. The teacher and the students should have a thorough experience in teaching and learning online. They should be able to use meeting and communication applications in addition to other educational platforms. Technology assisted the teacher and the students, especially to a great degree as it helped with cognitive-based tasks. Although the results are somewhat mixed, especially because of the within-group statistic results, they support the general attempts of the previous studies in the area of Applied Cognitive Grammar/ Linguistics.

## 4 Conclusion

The focus of the present study has been on the role of the construal theory in Cognitive Grammar in the field of EFL. Using the theory, the researcher taught Kurdish EFL college students the construal of the negative suffixes -free and -less in English explicitly according to the prepared course material. The paper concluded that the construal theory has great practical value for English teaching practices and the whole teaching process could be delivered in an online-based classroom. Two approaches regarding the negative suffixes have been evaluated. One is the traditional pedagogical approach. The other is the Cognitive Grammar pedagogical approach. The first is concluded to be ineffective in terms of material content and task design because it treats language as an isolated system. Language consists of a set of rules, to which linguistic items must conform. It suggests learning linguistic items one by one. The second treats language as a system embedded within and inseparable from general cognitive processes. The Cognitive Grammar approach has turned out to be more effective in terms of teaching and delivering the lessons' material and tasks. It embraces the role of human creativity and flexibility in structuring the world and allows for mental capacities to shape language. It aids critical thinking and understanding of how the mind stores information, facilitates learning experiences, helps students gain linguistic items, and develops more advanced language skills. Yet according to the statistical results of the pre-test and post-test, this research can moderately support Langacker's (2001:3) suggestion about the effectiveness of a cognitive pedagogical model of teaching grammar/language and goes boldly with Langacker's (2008a) suggestion for more in-depth empirical research in the field of Applied Cognitive Grammar in the future.

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## پوختە

ئـەم توێژینەوەیـە، تیشـکێکی نـوێ دەخاتـە سـەر فێرکردنـی پاشـگرە نێگەتیڤـە ئینگلیزییـەکان (-eerf و -ssel) بـۆ قوتابیانـی کـورد کـە خوازیـاری فێربوونـی زمانـی ئینگلیزیـن وەکـوو زمانێکـی بیانـی. بـۆ ئـەم کارە، توێژینەوەکـە دوو مۆدێلـی پیداگۆگیـک لـە ڕێنوێنییەکەیانـدا کێشـراوە کـە بریتیـن لـە نەریتـی و مۆدێـرن. پێداگۆگیکیـی نەریتـی، جەخـت لەسـەر شـێوازی ڕووخسـار و پێکهاتـەی زمـان بـە تەنیـا دەکاتـەوە، لەبـەر ئـەوە بەهـای سـنووردارە بـۆ گەشەسـەندنی دەسـتکەوتنی زمـان. پێداگۆگیکیـی مۆدێرنـی کـە لەلایـەن ڕێزمانـی گۆگنەتـڤ وەرگیـراوە، واتـە جەخـت لەسـەر لایەنـە واتاییەکانـی پێکهاتـە ڕێزمانییـەکان دەکاتـەوە. توێژینەوەکـە سـوودی بنەماکانـی ڕێزمانـی کۆگنەتـڤ لـە ڕێنوێنیـی ڕێزمانـدا دەخاتـە ڕوو. لـە ڕێزمانـی کۆگنەتڤـدا شـێوەی دەربڕیـن، ڕەنگدانـەوەی ڕاڤەیـە کـە گوزارشـتە لـە ناوەڕۆکـی دیاریکـراو. لەسـەر ئـەم بنەمایـە، پاشـگرێکی نێگەتیـڤ تەنیـا کردارێکـی مۆرفۆلۆجـی نییـە بەڵکـوو مانـای خـۆی هەیـە کـە هەڵسـوکەوتەکەی مەرجـی خـۆی دەبێـت. ئامانجـی کردارییـ ئـەم توێژینەوەیـە ئەوەیـە، بیـردۆزی بەچەمککـردن لـە فێرکردنـی پاشـگرە نێگەتیڤـەکان (-eerf و -ssel) لـە پۆلێکـی ئۆنڵانیـدا جێبەجـێ بکرێـت. لـە کۆتاییـدا، توێژینەوەکـە بـە شـێوەیەکی مامناوەندانـە پشـتگیری لـە فێرکـردن دەکات لـە ڕێگـەی ڕێبازێکـی مانایـی و بـە شـێوەیەکی کۆگنەتڤییـەوە.

وشـە سـەرەکییەکان: ڕێزمانـی کۆگنەتـڤ، ڕێبـازی نەریتـی، بەچەمککردن/ڕاڤـە ، پاشـگرە نیگەتڤـەکان، فێربوونـی ئۆنلایـن، قوتابیانـی کـورد کـە خوازیـاری فێربوونـی زمانـی ئینگلیزیـن، وەکـوو زمانێکـی بیانـی.

## الملخص

يسـلط هـذا البحـث الضـوء علـى تعليـم اللواحـق النافيـة الإنجليزيـة eerF - وsseL - للطـلاب الاكـراد المتعلميـن اللغـة الإنجليزيـة كلغـة أجنبيـة. للقيـام بذلـك، تـزن الدراسـة نموذجيـن تربوييـن فـي تعليمهمـا: أحدهمـا تقليـدي والاخـر حديـث. فيركـز النمـوذج التربـوي التقليـدي علـى التكويـن النحـوي للغـة، وبالتالـي فهـو ذو قيمـة محـدودة لتطويـر اكتسـابها. امـا النمـوذج التربـوي الحديـث، المسـتوحى مـن مبـادئ النحـو العرفنـي للغـة، فهـو موجـه نحـو المعنـى، ويؤكـد علـى الجوانـب الدلاليـة للتراكيـب النحويـة. حيـث تسـلط الدراسـة الضـوء علـى فائـدة مبـادئ قواعـد العرفنـة فـي تعليـم قواعـد اللغـة. ففـي مبـادئ النحـو العرفنـي، تكـون التركيبـة النحويـة هـي انعـكاس لعمليـة المفهمـة المتصـورة فـي ذهـن المتحـدث فـي محتـوى معيـن. بنـاءً علـى ذلـك، يُقـال إن اللاحقـة النافيـة ليـس لهـا وظيفـة تركيبيـة لغويـة فحسـب، بـل لهـا أيضًـا معنـى خـاص بهـا يحـد مـن سـلوكها. الهـدف العملـي للبحـث هـو تطبيـق نظريـة المفهمـة فـي تدريـس اللواحـق النافيـة - eerF وsseL – فـي فصـل دراسـي عبـر الإنترنـت. فـي الختـام، يدعـم البحـث وبشـكل معتـدل التدريـس مـن خـلال نهـج قائـم علـى نحـو العرفنـة.

الكلمـات المفتاحيـة: النحـو العرفنـي، المنهـج التقليـدي، عمليـة التصـور، اللواحـق، التدريـس عبـر الإنترنـت، الطـلاب الاكـراد المتعلميـن اللغـة الإنجليزيـة كلغـة أجنبيـة.