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# ATINER's Conference Paper Series EDU2015-1805

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This paper should be cited as follows:

Correa Rios, G., Alfaro Lopez, L. and Orduna Mejia, J. (2016). "EFL Curriculum Design Based on Peirce Sign Theory to Foster Lexical Competence and Linguistic Performance in Young English Learners", Athens: ATINER'S Conference Paper Series, No: EDU2015-1805.

Athens Institute for Education and Research 8 Valaoritou Street, Kolonaki, 10671 Athens, Greece Tel: + 30 210 3634210 Fax: + 30 210 3634209 Email: info@atiner.gr URL: www.atiner.gr URL Conference Papers Series: www.atiner.gr/papers.htm Printed in Athens, Greece by the Athens Institute for Education and Research. All rights reserved. Reproduction is allowed for non-commercial purposes if the source is fully acknowledged. ISSN: 2241-2891 27/01/2016

## EFL Curriculum Design Based on Peirce Sign Theory to Foster Lexical Competence and Linguistic Performance in Young English Learners

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#### Abstract

This document examines the deficit of lexicon and linguistic performance of a group of young English learners and some of its most important repercussions when attempting to communicate effectively in English as a foreign Language (EFL), such as wrong interpretation when reading, absence of listening skills to extract information or follow instructions in class, inaccurate attempts to produce written or spoken language, and weak wordassociation processes. These issues lead to a poor language performance and the impossibility of the students to express their thoughts or ideas clearly. The authors designed and assembled an English Language Learning curriculum while contemplating the specific needs of the Colombian educational context, as well as the students' language background and learning needs. This proposal starts by considering the sign-theory concepts about oneness, representation and representamen proposed by Peirce. These notions became the basis for the creation of teaching instruments, assessing processes and enhancing of language competences; addressing sign representations and mental imaging to increase awareness of vocabulary learning, construction of meaning and their application in different learning contexts. The possible relationships between words and meaning also support and supplement other linguistic competences development, allowing the students to integrate all language skills into real learning scenarios. This paper attempts to characterize and demonstrate the positive impacts of an EFL curriculum in the construction and implementation of a diversified lexicon that supports the language learning process of the students-- in several learning stages or situations-- by enriching their lexical competence through a mental imaging representation approach that helps the students to create adequate word-association processes in order to improve their entire linguistic performance when communicating with classmates or teachers.

**Keywords:** Sign theory – Linguistic performance – Lexical competence.

#### Introduction

Approaching the development of lexical competence has been included in the majority of ELT curricula, either as a Foreign or Second language; by questioning the way a learner acquires and adjusts meanings in L2 to what is known in L1, the project was initially proposed as an alternative inquiry on what would be a simpler way to accommodate new vocabulary using an adapted meaning - or creating one - before the actual word was associated with an uttered sound.

Saussure has been considered one of the founding fathers of linguistics regarding the European account of how language and meaning are associated and produced. Most of his work was not directly recorded as a theoretical source but was documented through the notes his students kept from seminaries and classes. His contributions to the linguistic performance theory state the difference between meaning and representation that comes from the social use of a notion. It wasn't until the philosophy was introduced by Charles Sanders Peirce (1860) that language was considered the expression vehicle for conceptions of the world as it is known by the speaker. Peirce, then, decided to logically consider not only the social use of a term but also the value that the speaker intends to apply depending on the context, having the possibility of choosing from a diverse repertoire that is widely proportional to external *stimuli* (Peirce, 1860)

The research question of the project was created by comparing a regular ELT session with an assembled curriculum component, in addition to the grammatical and syntactical, using the possibilities of choices to widen the repertoire that a speaker could use to express the knowledge and comprehension of the world by accommodating or creating a new meaning in L2.

When students are tested on their ability to perform production of language in simple structures, given a set of formulas to fill in with a *repertoire* that is not much reinforced, they still typically struggle with the task. In the curriculum proposed by the authors, students will first have a sustained foundation of a *data base* to be applied later to a grammatical structure that the speaker can modify as she/he pleases depending on the significance that could be expressed. It is appropriate to mention that such *data base* or *repertoire* has been carefully shown to the learner in a way that the translation process does not take place and, instead, a new pre-conception is originated culminating in an assemblage with a vocal sound.

The project resulted in a successful outcome for students to enhance themselves in the acknowledging process of repertoire distension in order to achieve an infinite number of possible expressions that a leaner could select from a determined context to verbalize a notion.

#### **Theoretical Framework**

#### Semiotic Foundations

Language, as defined in the field of linguistics, is the way several units either graphic or sound - are organized to construct a meaning accepted and used by a number of individuals. The units, then, come to be signs or social representations that are modified, obliterated or created depending on the communication need. Semiotics is the discipline that studies how these associations are made taking into account the *stimuli* received by the learner, describing enormously how the world is perceived by the group of individuals that adopt the usage of determined manifestation.

Klinkenberg (2006, citing Saussure 1883) founded his definition of sign using two components: signifier and signified. The first one is the mental representation that each individual may have for specific stimuli commonly accepted by a community. The second one would fit as the psychological memory of the verbalized word that separates itself from another *signified*. It is vital, then, to mention that such notions cannot be represented physically and need to be considered only as a mental understanding on how significance is originated.

Merrel (2001, citing Peirce 1868) formulated a similar way regarding the sign structure by considering an additional component: the *interpretant*. Such model is then configured as a triangular scheme: the *object*, being the common concept acquired by a determined situation that could never be the genuine matter represented; the *interpretant*, being the notion created with previous experiences of the individual; and the *representamen* equivalent to the signifier or uttered sound.

Additional to the sign structure, Peirce also formulated a nature that was defined based on the human experience that an individual could get through her/his world's perception. This nature depended on three philosophical stages: firstness, being the unity or *object* without a cause or consequence; secondness would be the link within the emotion and a *momentum* resulting in the experience of the individual in relation to an *object*; finally, the *thirdness* would be the need of the expression according to the experience acquired by several individuals to designate a sign as such and include it as part of a *repertoire*.

Following the line of reasoning mentioned in the previous paragraph, the learner would have to associate the new object in L2 with a cause-consequence to what is known in L1, if pertinent. Then, the previous experience acquired in L1 would be acknowledged and modified - or omitted - to create an encounter in L2 associating the sign with a vocal sound.

#### Semantic Implications

The previous section refers to how people create mental images and how they contain a sense of knowledge with respect to the world. In the same order of ideas, what will be discussed is what people do with those representations they create in order to express significance. That is what semantics deals with-- meaning and the negotiations between interpretations of concepts, also mediated by the same representations. Therefore, one of the completely necessary aspects which must be included when talking about lexical competence is semantics. This concept has been studied from cognitive, psychological, conceptual, mathematical and other perspectives. However, under a linguistic field vision in which this term is used, its presence is perceived as a basis that allows the development of the competence previously mentioned. Thus, this section of the paper reviews some of the most significant theoretical linguistic positions of semantics in order to select the appropriate ones to work as that basis. The criteria to be used include characterizing every single semantic derivation to have what they can offer, then by comparing and contrasting them in order to choose the ones to be supported and used.

First of all, a definition for semantics needs to be stated just to limit its field of action for the purposes of this document. In this sense, Stevenson (2010) in the Oxford Dictionary of English explained that semantics is a linguistic field related to meaning. It is divided into formal, lexical and conceptual semantics. In this way, the definitions as well as the derivations show how semantics includes rational aspects of meaning, the way in which that meaning is reproduced when combining words and how it is an elaboration of the human mental structures. Taking into account the sub branches the definition provides, I feel it becomes more simplistic to use them as the ones to be characterized and analyzed.

The description of formal semantics is limited to unreal languages creation and their interpretation. Can (1993) manifest that it analyses artificially-created languages which are opposed to real languages. Then the linguistic repertoire of those languages is interpreted by using specific rules which contribute to objectivity, omitting real social aspects of meaning.

Referring to lexical semantics Cruse (1986) states: "We do not communicate with isolated words; words are not the bearers of messages; they do not, of themselves, 'make sense'; they cannot, taken singly, be true or false, beautiful, appropriate, paradoxical or original". A linguistic item must in general have at least the complexity of a simple sentence to show such properties. This clarification points out that meaning requires at least a simple and very limited context which makes clear how the used words are to be understood, providing them with common sense.

The description of conceptual semantics indicates how mental capacities work in language. Jackendoff (1990) indicates also that: A level of mental representation called conceptual structure is seen as the form in which speakers encode their construals of the world. Conceptual semantics is concerned with the mental representation of the world and its relation to language. So, the significance coming from the world is recalled by linguistic production.

The way in which the three semantics derivations are similar is in the key fact of focusing on interpretation and observation processes over meaning in which all of those sub-branches work. This means that they share the axiomatic view of perceiving meaning as something produced by human beings, instead of perceiving it as a product in itself.

One the other hand, the way in which the sub-branches differ is by approaching meaning in different styles. The first case (formal semantics) perceives languages as things static, limited and consequently predictable. Nevertheless, the second case (lexical semantics) manifests the importance of real-language-user data as a means to analyze linguistic patterns. Furthermore, it reiterates how word meaning is built by mixing them. Finally, the third case (conceptual semantics) states meaning as a mental entity which comes into being as the consequence of human interaction with the world. Thereby, the multiple ways in which semantic derivations proceed towards meaning display a divergent comprehension of language.

The sub branches that best fit the goals of this project being conducted are lexical and conceptual semantics. Their features are restrictively directed to mental representations and word-by-word implications-- crucial facts when learning new words usages. Consequently, they are the ones to be used as the proper support for the pre-established aims.

#### Lexical Competence and Linguistic Performance

The manner in which a person makes sense of the world defines their linguistic competence. This concept has been addressed in the CEFR by aiming at the principles inside of it-- "lexical competence, phonological competence, grammatical competence, semantic competence, orthographic competence and orthoepic competence" (CEFR, 2001). These abilities support the progression of the linguistic competence by addressing the students' language necessities from diverse points.

Considering the linguistic competence and its elements, it is difficult to cover all its dimensions and implications, since all these competences are interconnected and need each other; therefore, it is necessary to structure an order on how the lexical competence is built by narrowing it down into its parts.

#### The Lexicon

The lexicon is formed by two key conceptual elements: words and lexical concepts, which are interrelated by mental representations that humans constantly construct and modify. "The part of the lexical entry provides what is sometimes called a 'lexical-conceptual structure' for the word. It gives the word's meaning" (Glanzberg, 2011).

The Council divided the lexical competence into fixed expressions and single word forms (CEFR, 2001). These two elements are the conceptual connections that join the lexicon with the semantic structures in order to develop the linguistic competence. Considering the lexicon as the main source of mental connections between language and linguistic performance, I feel the lexical should start being constructed at the beginning of the language learning process.

#### Word forms

This notion has been addressed from diverse perspectives; "A word is a written sequence which has a white space at each end but no white space in the middle" (Harley, 2004).

This conceptualization comes from a morphological view. Another perspective states "A word is a piece of speech which behaves as a unit of

pronunciation" (Harley, 2004). This definition connects the structure concepts with the criteria and the way the words are moldable and change according to the speaker's intention. A third postulate exposes that "A word is one of the several forms that may be assumed by a lexical item for grammatical purposes" (Harley, 2004).

#### Multiword Units

An EFL student acquires another type of vocabulary named fixed expressions or multi-words units (CEFR, 2001). This type of lexicon is constructed with language expressions or idiomatic premises. The European council exposed a variety of kinds of multi words starting from the achievement of basic commands or requests until the complex construction of in - context expressions. This proves the word association processes that learners make when they internalize entire expressions formed by words.

#### Lexical Competence

These two important concepts form the lexical competence which some authors have defined as the way speakers relate meaning with collocation and morphological structures "knowing a word implies knowledge of semantic and grammatical aspects related to a word, such as collocation and syntactic patterns as well as its different semantic relations" (Richards, 1976). Other authors such as Meara (1996) differ from this perception by giving a perspective to the lexical competence that is focused on vocabulary construction by relating meaning with mental representation.

The lexical competence seeks to transform the way language is produced in terms of understating and internalization of structures. "The lexical competence is the knowledge of, and abilities to use, the vocabulary of a language consisting of lexical elements and grammatical elements" (CEFR, 2001).

The lexical competence finds utility when a learner is able to use her/his lexical properly in different scenarios; therefore this competence is in constant renovation in order to encounter new ways to communicate effectively. The construction of a lexical and its implementation through the lexical competence leads to another important concept-- the linguistic performance. This concept was addresses by Chomsky (1965): "Competence as an idealized capacity that is located as a psychological or mental property or function and 'performance' as the production of actual utterances." This conception of real language against the theoretical language knowledge is related to the type of vocabulary that a student learns. In the first place, a student should be able to develop word association processes through imaging recognition, an experience that is based on learning or by extracting words from contexts.

A concept related to linguistic performance and its contribution to lexical competence is based on acquired learning and the way it functions in a specific community. Since the performance is related to the doing in terms of language learning, some knowledge is transmitted e.g. its morphological forms and the semantical to establish a new mental association that will lead into a structured lexical competence.

#### Methodology

In order to show how action research works, the framework produced by Ferrance (2000) is chosen to determine the functionality of just her version since the process of implementation varies from author to author. In this sense, she shows a five - step action research cycle. (p.9) The first step is denominated identification of the problem area. This part consists of recognizing the specific problem that occurs in the population(s). The importance of this step is that we can narrow down the research action field. The first instrument was a survey for both groups. They were asked about the English classes they had taken, as well as their contact with the language. The second instrument was a placement test that was applied to all the students in the first session. This questionnaire was meant to provide a clear diagnostic as to how the students' abilities were regarding constructing coherent structures, recognizing basic vocabulary and comprehending class commands.

The second part of the research framework is the collection and organization of data. The importance of this step is to establish a clear and coherent structure to follow when developing the project. In this order of ideas, the first population comprised a control group in which traditional lesson plans were used; the second population was an experimental group in which basedon-the-sign-theory lesson plans were used. The instruments to support this part were two tests to evaluate the impact of the sign theory curriculum design and the one coming from a typical planning design. The first test was carried out in the fifth session while the second test in the last one. They were meant to measure mid- and end of term results.

The third phase is the interpretation of data. This was a permanent process along the project. The purpose of this step was to evaluate the impact of the sign theory curriculum design as well as the typical one in order to be able to state the similarities or differences coming from the produced results. The next stage in the process is called action based on data. This stage was carried out from the sixth to ninth class. These lessons had a vocabulary component presented, since its development was the basis of the project. Therefore, the two lesson plan models were reinforced according to their own features.

The fifth and last stage of the research framework is called reflection. The importance of this part lies in the cyclical model that the project followed, so once the classes based on vocabulary construction related to language skills ended, a last interview was developed and transcribed with two students (one per population) chosen by the teacher. They answered questions showing their awareness towards their own language learning process and the impact of the implemented activities on the two different curriculum designs. Thus, it could be recognized which of the two models worked better.

#### **Context and Participants**

This study was carried out in a private school located in Bogota, Colombia. It required the presence of two groups. The first one, called the

experimental group, was a third grade class which had 17 students, of ages 8 to 10, from which 3 were girls and 14 were boys. In this group based-on-sign-theory lesson plans were implemented in order to foster lexical competence. The second one, called the control group, was a third grade class which had 15 students, also of ages 8 to 10, from which 4 were girls and 11 were boys. In this group traditional lesson plans were implemented with the same purpose as that of the previous group.

#### **Findings**

The analysis was intended to measure the impact of the utilization of the EFL curriculum based on the sign theory proposed by Pierce to achieve an improvement in lexical competence. Therefore, the interpretation had three relevant moments that were based on the conceptual components of the theory. The first moment deals with the vocabulary networks the students established while internalizing sets of word forms or multi word units and the observation of the effect of the connections between the meaning and the social construction of new conceptualizations. A second stage of the analysis examined the first attempts of communication in the target language, based on the integration between the construction of a lexicon and the accuracy of the lexical competence. Finally, a third phase of the analysis evaluates the impact of the proposed curriculum in terms of the positive achievement of the linguistic competence and the way this ability promotes a significant impact in the entire language learning process.

Students were able to establish vocabulary networks at the first moment of the implementation of the curriculum by working on exercises that addressed previous knowledge or notions they had about specific themes or thematic. Therefore, vocabulary themes such as food or class materials were easy to comprehend or absorb due to the close relationships the students have with these concepts. This process of construction also allowed students to be more conscious about the way new vocabulary was linked to already established nets of vocabulary. Hence, this phenomenon was the first step of an improved lexicon in its size and use for communicative purposes.

A second connotation from the first moment of the process was the case of conceptual semantics in which the analysis focused on the way students related concepts. By reproducing them in several scenarios, some of them included joining letters to get a word related to an image, using word search puzzles and matching words and pictures. Hence, variations in the language occurred including the misspelling of some words that were part of the vocabulary taught e.g. *pige* instead of *pig*, and *syt* instead of *sit*; nevertheless, this action does not affect overall meaning but is more a matter of writing.

Question 1 PIG	Question 2 BIG	Question 3 HIT	Question 4 ZIP	Question 5 SIT
PIG	BIG	HIN	ZIP	SYT
PIG	BIG	HIN	ZIP	SYT
PIG	BIG	HIN	ZIP	SIT
PIGE	BIG	HIN	ZIP	SIT
PIG	BIG	HIT	ZIP	SIT
PIG	BIG	HAT	ZIP	SYT
PIG	BIG	HAT	ZIP	SYT

 Table 1. Joining Letters, Activity Implemented in Lesson Plan 1

Another proof of this situation might be found in the way concepts are presented in the culture; especially the social characteristics, which are evaluated through previous agreements that later become formalized signs. As observed in **Figure 1** below, a behavioral indicative features selection to denote profession by employing the military salutation that guides the observer to understand a rank of authority without a *representamen*, the stethoscope being widely known as a tool to be used by medical personnel as well as a nurse's cap - originally designed for identification of the woman in service of the sick population - has become an irrefutable *interpretant*. The fragment strongly advises that the student first identified the previous cultural elements to then relate them with the representamen applying an omission principle in order to select the most probable (or appropriate?) option.

Figure 1. Activity Implemented during Lesson Plan 3, Experimental Group



The second stage of the analysis evaluated the early attempts to communicate in the target language measured by two components: The level of accuracy in which the students were able to establish vocabulary associations (lexical semantics) and the impact of word forms and multiword units in terms of quality and quantity. As seen below in **Table 2**, during an activity the experimental group manifested an advance in terms of expressing a personal opinion about certain types of food by indicating if the student liked or disliked certain dishes. On the other hand, the traditional group had problems when having to classify the types of food; many of their answers did not fit any of the options. The contrast shows that while the experimental group was unable to properly relate a notion to one of its characteristics (e.g. a vegetable and its color). Therefore, the sign-based curriculum provides students with better tools to establish logical meaningful structures of lexical semantics than the other curriculum did.

Item 1	Item 2	Item 3	Item 4
fish	No answer	onion	ice cream
No answer	hamburger	egg	onion
Hamburger	onion	fish	fries
Fries	No answer	hotdog	hamburger
No answer	onion	cornflakes	egg
Egg	hot dog	hamburger	fish
Control Gro			
Experimental (	Froup		

**Table 2.** Vocabulary Expressed During Likes and Dislikes Activity in LessonPlan 4

With some writing tasks as the one seen in **Figure 2**, seen below learners proved to mentally organize word forms and some basic multiword units. Due to this connection their lexicon started to expand, and the amount of words increased in the specific themes they worked on. This previous scenario combined with the advantages of the mental labeling of daily actions, likes and dislikes allowed learners to be ready for a more productive stage in terms of spoken and written language, measured by analyzing their level of success regarding their lexical competence in specific contexts. Hence, the first attempts in the target language were evident due to the expansion that the students' lexicon was undergoing when they were selecting suitable vocabulary and word networks to achieve communicative purposes.

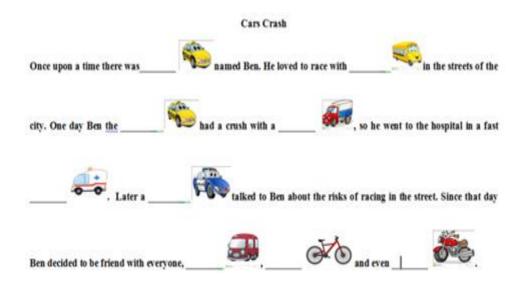


Figure 2. Activity Implemented During Lesson Plan 6, Experimental Group

In the third stage of the analysis, a crucial differentiation between both groups was established. As seen below in Table 3, students in the experimental group were asked to write sentences for a specific vocabulary network (house furniture) implementing, as well, a basic grammar structure such as There, To Be. This group had successful attempts in communicating amount, number or quantities by using ways to express some basic or complex thoughts. On the other hand, the control group was able to recognize the words in the vocabulary network, but it was difficult for them to establish a pertinent connection between writing structures and the proposed vocabulary theme. This situation is essential, since it is the first time that both groups have a different performance in terms of actual production from vocabulary networks; in other words, this event led to a separation of their linguistic performance between both groups.

1	2	3	4	5
There are 10 televisions	There are 4 sofas	There are 10 toys	There are 1	No answer provided
There is 1 chair	There is 1 computer	There is 1 bath	There is a bed	There is sink
The are clothes	There are some chairs	There isn't computer	There aren't Xbox	There is a lot of clothes
There is a lot of cupboards	There is a few of clothes	There aren't chairs	There is driving room	There is a picture
There is a sofa	There is 1 dining room	There is 1 puzzle room	There is 1 refrigerator room	There is 1 toys room
There is 1 sofa	There is 1 television	There is 1 refrigerator	There is 5 chair	There are some 2 bed

**Table 3.** Vocabulary Expressed During Likes and Dislikes Activity in LessonPlan 4

Control Group

**Experimental Group** 

During the last test, the students in the experimental group were able through writing activities to identify and apply some language structures previously studied. At the same time, they reflected upon the vocabulary networks they had studied during previous lessons and mixed fixed expressions with word forms. In the end they were able to increase their lexical competence by improving other language skills such as speaking or reading; they not only combined language structures with new vocabulary networks, but also were able to evidence a better performance in their entire language production. Another aspect is the action labeling they determined from previous concepts and personal background, since they took several activities as reference points their personal knowledge. In conclusion, the linguistic performance and lexical competence were nurtured by a constant update and recycling of word forms, multiword units and personal concepts that students had.

#### Conclusions

The differences perceived in the final linguistic level of both groups (experimental and control) allow to state three main conclusions:

1. The EFL based-on-the-sign-theory curriculum facilitated to use the students' previous knowledge of the world to place it into the

characteristics of a new language. Thus, cultural concepts commonly shared between learners could be understood and expressed properly.

- 2. The EFL based-on-the-sign-theory curriculum allowed students to establish longer and more significant vocabulary networks which ended in more complex as well as more accurate linguistic production; this means that students were able to provide with meaning the multi-word forms by comprehending they get meaningful as mixture units. Not only the input phases of linguistic assimilation (reading and listening) were deeply developed, but also the output ones (speaking and writing) were also developed the same way in an evolving form. This fact shows that the sign curriculum allows integrating lexical competence features as a means to achieve a better linguistic performance through time, affecting the four language skills.
- 3. The EFL based-on-the-sign-theory curriculum made students to be introduced under a continuum of vocabulary development which allowed them to go from simple and common language structures to more elaborated and independent ones. This is to say that the proposed curriculum provided students with the tools to start generating accurate language as a reflection of their own personal views over any specific class topic; a relevant indicator of the basis for natural speech development.

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