CONCEPTUAL TRANSFER: EVIDENCE FROM TURKISH EFL STUDENTS' USE OF SPATIAL PREPOSITIONS

Kavramsal Aktarım: İngilizce'yi Yabancı Dil Olarak Öğrenen Türk Öğrencilerin Konumsal Edatların Kullanımı

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Abstract

This descriptive study is an attempt to understand if and how the spatial positioning of information in L1 is transferred to L2 contexts. The first aim was to discern any commonalities among the syntactic errors that learners commit and put them under certain categories. Next, the influence of the learners' first language (Turkish) was sought on their prevalent errors in the light of Bada's (1989) comparison of Turkish and English case system and prepositions. An analysis of errors with reference to Kırkgöz's (2010) categorization of addition, omission and misuse errors showed that the most common error type was misuse followed by omission errors. Results suggest the transfer of the mental organization of concepts from L1 to L2 (English) complying with the Conceptual Transfer Hypothesis of Jarvis (2007).

Keywords: conceptual transfer, spatial prepositions, second language acquisition.

Özet

Bu betimsel çalışma bilginin ana dildeki uzamsal konumlanmasının ikinci dile aktarılıp aktarılmadığı ve eğer aktarılıyorsa bunun nasıl gerçekleştiğini anlamayı hedeflemektedir. Çalışmanın ilk amacı öğrencilerin yaptığı ortak sözdizimsel hataları ortaya çıkarmak ve onları uygun kategorilere yerleştirmektir. Daha sonra, bu yaygın hataların üzerinde öğrencilerin birinci dillerinin (Türkçe) etkileri Bada'nın (1989) Türkçe ve İngilizce hal ekleri ve edatlarının karşılaştırması temel alınarak araştırılmıştır. Kırkgöz'ün (2010) "ekleme", "çıkarma" ve "yanlış kullanım" kategorilerine dayalı yapılan hata analizleri en yaygın hata türünün "yanlış kullanım" olduğunu ve bunu "çıkarma" kategorisinin takip ettiğini göstermiştir. Sonuçlar Jarvis'in (2007) Kavramsal Aktarım Hipotezi ile uyumlu olarak kavramların zihinsel organizasyonunun birinci dilden ikinci dile aktarıldığı izlemini uyandırmaktadır.

Anahtar Sözcükler: kavramsal aktarım, konumsal edatlar, ikinci dil edinimi

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Introduction

Models of Cross-linguistic Influence

Cross-linguistic influence is one of the most widely studied areas in second language acquisition research. Although the term "cross-linguistic influence" has been extensively used since the 1980s, there existed a variety of other terms to refer to the same phenomenon, such as language transfer, linguistic interference, native language influence, and language mixing. Transfer is defined by Odlin (1989) as "the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired" (p. 27). It has been recently used interchangeably with the term cross-linguistic influence. Lado (1957; as cited in Odlin)–puts forward a *contrastive analysis model* which maintains that while learning a foreign language (L2), learners will find structures that are similar to their native language (L1) simple, but they will face difficulties in learning structures that are different from their native language. Hence, the Contrastive Analysis approach was used to list the linguistic differences between the native and the target language and to predict problem areas resulting from native language interference. However, not everyone welcomed the Contrastive Analysis model as it proved difficult to make precise predictions about the problem areas, and as nonstructural factors such as individual differences were involved. As a result, Error Analysis –collecting learners' errors, identifying and describing them– gained importance in the 1970s. Yet, it has been criticized too since it focuses only on learners' errors and ignores what they do right. Furthermore, Selinker (1972) proposed the *Interlanguage Theory* to account for the development of an intermediary system between the native language and the target language.

Another theory underlying the influence of L1 on L2 is MacWhinney's (1992) *Competition Model.* This model holds that learners rely on their knowledge transferred from L1 to function phonologically, syntactically, and lexically in L2. In order to accomplish this, they need to discover which cues directly map onto the new language and which cues need some manipulation before they are used in L2. In second language acquisition, the influence of L1 can be facilitative or inhibitive on learner's mastery of the target language. Its facilitative effect has been known as positive transfer, whereas the inhibitive effect is called negative transfer in the literature. Kellerman (1995) used the term *transfer to nowhere* to explain cases where learners attempt to use an L1 meaning category to refer to an L2 conceptual category in a non-congruent way, like the use of Gaelic idiomatic expressions in Irish English in Odlin's (1991; as cited in Kellerman, 1995) study. It is maintained that learners will keep the perspective of their native language rather than the target language perspective to encode their ideas linguistically.

Müller (1998) suggests the *Structural Ambiguity model* to explain the notion of transfer in simultaneous bilinguals. This theory posits that language transfer can be observed from the structurally least ambiguous language to the structurally more ambiguous language. In a study of a French/Dutch bilingual child, the Structural Ambiguity was exemplified as the child produced OV sequences which are not only uncommon but also not prohibited in French. It is proposed that the cues of such a production in French come from Dutch as a result of structural ambiguity in French constructions.

Conceptual transfer, which is based upon the view that language influences thought (i.e., *linguistic relativity*) is one of the concepts inspiring most of the transfer studies. According to Odlin (2005), conceptual transfer includes a form of linguistic relativity in that L1 influences thought and conceptualization in L2. Jarvis and Pavlenko (2008) also define conceptual transfer as the influence of L1-based concepts and conceptual patterns on L2. They argue that certain examples of transfer (i.e., lexical and grammatical categories) may result from the conceptual categories acquired in L1 and their mapping onto L2. This

kind of transfer is not only semantic but also derived from differing conceptual categories between languages. The researchers provide the example of an English learner of Russian using *chashka* instead of *stakanchiki* to refer to a paper cup. In English, plastic or paper containers used for hot and cold beverages belong to the category of *cups/chashki* whereas in Russian the peripheral members of the concepts in this category belong to the conceptual category of *glasses/stakany*. In this example, the transfer is conceptual as well as semantic since it stemmed from "inadequate knowledge of the contents of the conceptual category" (p. 121). Within conceptual transfer models, transfer of the organization of time and space is another specific topic which will be explained in the following section.

Transfer of Spatial Relations

The majority of studies on language transfer have focused on syntactic transfer with a specific reference to the influence of learners' L1 on the acquisition of L2 word order. There emerged conflicting results from those studies in that while some proved the influence of word order on L2 acquisition (Chan, 2004; Yip, 1995; Zobl, 1982), others reported no effect of it on L2 word order patterns (Fathman & LoCoco, 1989; Isurin, 2005). As a case in point, Pederson et al. (1998) examined the relationship between language and cognition with a specific focus on cross-linguistic and cross-cultural investigation of spatial reference. By focusing on two frames of reference, the absolute (north, south) and the relative ("in front of me", "to the left") organization of space, they found systematic variations which contradicted the universality assumption across 13 language communities they analyzed. The findings showed that the use of linguistic coding reliably correlates with the way people conceptualize and memorize spatial relations for nonlinguistic purposes. In a different design, Carroll, Murcia-Serra, Watorek, and Bendiscioli (2000) included L2 users and compared the spatial cognition of both L1 and L2 speakers of German. The results of their study yielded that although L2 users mostly produced morphosyntactically accurate structures, their production of co-adverbials was very limited compared to that of native speakers.

Jarvis and Odlin (2000) investigated the patterns of spatial reference systems of Finnish and Swedish learners of English in their productions in L2. The results evidenced differences between Finns and Swedes in their options of expressing spatial relationships and morphological transfer. Finns who also belong to the typologically more distinct language group exhibited awareness of interlingual identifications between the bound locative morphology of Finnish and the spatial prepositions of English. The authors, furthermore, observed an interaction between transfer and simplification in Finns' frequent use of zero prepositions in obligatory contexts and their overgeneralization of the preposition *in*. In the end, the researchers concluded that Finns omit prepositions in their English production far more often than Swedes do, and this, according to them, largely stems from the substantial differences between English and Finnish in their realization of spatial relations. Meriläinen (2010) also investigated patterns of lexical and syntactic transfer in Finnish students' writing from 1990 to 2005. The findings showed instances of Finnish influence on the students' deviant structures of passive construction, expressions for future time, the expletive pronoun construction, certain subordinate clause patterns, and prepositional constructions. However, the observation of Swedish students' constructions indicated that they were better in these analyzed syntactic patterns in comparison to the Finns.

With the integration of nine typologically distinct languages, Levinson et al. (2003) conducted a cross-sectional study so as to demonstrate how nonlinguistic spatial cognition changes in accordance with the cross-linguistic differences in linguistic structures. The results revealed that speakers of typologically proximate languages

performed similarly on tasks of recall and recognition memory of the spatial arrangements of objects; whereas speakers of other languages, such as Dutch and Japanese employed a different locational strategy. In another cross-sectional study of syntactic transfer, Chan (2004) found out L1 influence on complex target constructions of especially lower proficiency students and relatively of higher proficiency students. The analysis of 710 Hong Kong Chinese ESL learners' production data showed that the students tended to think in their L1 first before writing in English, and the structures they produced in English were similar to the usual or normative structures in their L1.

Hohenstein, Eisenberg, and Naigles (2006) studied bidirectional lexical and grammatical transfer in adult speakers of English and Spanish of various ages of acquisition with the help of the descriptions of the video motion event stimuli. Their results suggest that the independent or interactive processing of L1 and L2 depends on the age of acquisition and is mostly observed in lexical rather than grammatical processes. In her study on the use of locative prepositions *in, on,* and *at*, Alonso (2009) set out to test the hypothesis of whether Spanish learners of English would simplify the English prepositional paradigm only to the preposition *in*. Through translations, sentence construction exercises, and picture description tasks, obligatory contexts where students should use *in, on,* or *at*, were created. The findings confirmed her hypothesis in that the participants conceptualized English locative prepositions according to the mental structure they transferred from their native language. As a result, they failed to use locative prepositions accurately in English. The writer documents proof for the existence of *Conceptual Transfer* as most of the students applied the perspective of the source language rather than adapting to the conceptualization of prepositions in the target language.

Among the studies conducted on the cross-linguistic influence patterns between Turkish and English, the focus of Bada's (1989) experiment complies with the focus of interest in the present study. Through their answers to 100 test questions, he evidenced the influence of Turkish case markers on English in the data of 60 college students. He further observed that such an influence decreased through interaction with the target linguistic forms.

Adopting an Error Analysis approach, Kırkgöz (2010) studied the written errors committed by 86 Turkish adult learners of English and examined the sources of errors. The errors were grouped under two major categories: intralingual errors and interlingual errors. The intralingual errors refer to negative transfer of language structures within the target language and are observed at the developmental stages of language learning, such as overgeneralization. Wrong use of third person singular –s with modals were given as examples to the overgeneralization category (*He can sings* song*). Interlingual errors, on the other hand, stem from transfer from the native language, and thus are coined as interference, such as prepositional or grammatical interference. Omission of the plural marker –s at the end of countable nouns (e.g. *three cup* of coffee*) exemplified grammatical interference observed in Turkish learners of English. The results of her study showed an overwhelming dominance of interlingual errors in the utterances of students who were at the initial phases of language acquisition.

In an attempt to understand interlingual errors in the constructions of Turkish students, Elkılıç (2012) examined a total of 1078 compositions written by intermediate and upper-intermediate level university students. His results displayed that misusing the prepositions, omission of the indefinite article, subject-verb agreement, and number, quantifier-noun agreement are the most common interference errors made by the learners. In a more recent study conducted with Turkish learners of English on the type of interference errors, Yıldız (2016) also found that prepositional interference is the most frequent error in the spoken data followed by lexical interference and grammatical

interference respectively. The following section elaborates more on conceptual transfer hypothesis which has been put forward to illuminate such interlingual errors caused by different conceptualization of space across languages and cultures.

Conceptual Transfer Hypothesis

Bowerman (1996) points out that English has a different dimensional conceptualization, and children acquiring English conceptualize space accordingly. Thus, mental organizations of space and their conceptual representations do not always find similar counterparts in different languages since spatial perception is shaped through language in various cultures. Space is perceived as the relationships that exist between objects, and it is shaped by the systems of mental organizations of each language. According to Jarvis (2007) "informally, the term conceptual transfer denotes the observation that second/foreign language learners and bilinguals from different language backgrounds often refer to the same objects and events in conceptually different ways and in ways that are specific to their language backgrounds" (p. 44). Within a theoretical framework, he refers to conceptual transfer as the *Conceptual Transfer Hypothesis (CTH)* which is characterized by certain instances of cross-linguistic influence in individual's use of one language based on the conceptual knowledge or patterns of thought that the person has acquired in another language. The current study registers to the *CTH* of Jarvis (2007) in the examination of the organization of spatial relationships by Turkish EFL students and the following data analysis will be pursued within this frame of reference. Furthermore, following Jarvis and Odlin's (2000) conceptualization of the semantic and morphological choices L2 learners make, this study assumes an interaction between simplification and transfer for the organization of Turkish learners' spatial expressions in English.

A typological comparison of English and Turkish reveals that Turkish has a number of postpositions which can have a similar function with English prepositions. The spatial relationships are mainly expressed through bound, agglutinative morphology in Turkish.

The comparison of the case system in Turkish and the prepositions in English as provided by Bada (1989) is reproduced in Table 1.

Table 1. Differences between Turkish and English case system and prepositions

	Goal/ Dative	Accusative	Location/ Locative	Source/ Ablative	Genitive	Instrumental
Turkish	*-(y)e, -(y)a*	*-ı, -i, -u,-ü*	*-de, -da, -te, -ta*	*-den*	*-(n)ın, -(n)in, -(n)un, (n)ün*	*-le, -la*
English	*to, into, at, on, onto*	-	*at, on, in*	*from, out of, of, off*	*of, to*	*with, by, through, via*

Note. In Turkish the function of prepositions is realized through case markings which comply with the last vowel of the noun they are added to (Bada, 1989).

As the above review of literature depicts, there is a scarcity of research investigating the cross-linguistic influence of Turkish on the use of prepositional structures in English. Hence, this study is an attempt to reveal the patterns of possible conceptual transfer of spatial relationships from Turkish to English, and to fill the gap in the existing literature regarding this issue.

Research Questions

1- What are the common patterns of errors in the upper-intermediate level Turkish students' descriptive essays in the domain of spatial reference?

2- To what extent can these errors be explained with reference to the conceptual transfer of Turkish (L1) organization of spatial relationships to English (L2)?

Methodology

The participants of the present study were 63 Turkish freshman students at the Department of Foreign Language Education of Yıldız Technical University. Their ages ranged between 19 and 21, and their proficiency level was Upper-Intermediate as determined by the proficiency exam given by the department subsequent to their registration in the university. Within the scope of the Advanced Reading and Writing course lesson, they were asked to write a descriptive essay which would give a detailed description of their houses, their rooms, their dormitories, or any other place that was important for them.

In analyzing a total of 63 descriptive essays, firstly, the errors in each individual paper were identified. With a specific focus on cross-linguistic errors pertaining to the patterns of spatial reference, the commonalities were extracted and recurring codes were analyzed under certain categories. The recurrent errors were grouped under addition, omission, and misuse categories following Kırkgöz's (2010) categorization. Prepositions express relations between entities, and they are expressed via a variety of case endings in Turkish. Deviant prepositional structures will be analyzed under syntactic transfer since the omission of prepositions will be interpreted to be the result of syntactic simplification (Jarvis & Odlin, 2000).

Results

To answer the first research question, all of the students' essays were analyzed with a special interest on their use of prepositional structures. Although the error occurrences were analyzed qualitatively, the frequencies of mistakes regarding each category were given in numbers (see Table 2).

Table 2. Distribution of errors across the categories

	Frequency	*Percentage (%)*
Misuse	92	53
Omission	45	26
Addition	36	21
Total	173	100

First, it is noticeable that most of the students' errors are misuse errors with a frequency of 92. The replacement of a wrong preposition instead of the grammatically and conceptually proper one is called misuse errors. Some examples of them are given below:

at:

*At the below of stairs, visitors can see real cannon beings.

*The smell of delicious meals that they cook **at** dinner is inevitably inviting.

*My room is **at** the second floor of our home.

in:

*In entry of village, four roads lie down.

*I put my books and notebook **in** the two shelves which the black table has **in the down part of it.**

*In the border of the dam, archeological squares show themselves.

*They act the greatest love stories **in** that stage.

*It is **in** the left side of the room facing the window.

Other misuse of prepositions:

*It was exactly the same **with** my dream.

*My walls are painted **by** light green.

As it is apparent from the erroneous sentence samples above, most of the misuse errors are related to *"in"* and *"at"*. As the table of comparison of Turkish case markers with English prepositions (see Table 1) reveals, while there is only one suffix for locative case in Turkish, it is expressed in a variety of ways through prepositions, such as *"in"*, *"on"*, and *"at"* in English. This may point to a simplification of the English locative prepositional paradigm resulting from the participants' misunderstanding of the English three-dimensional conception of space since there is only one equivalent in Turkish for the corresponding prepositions in English. The students seem to have overgeneralized the use of preposition *in* to refer to spatial contexts which would otherwise require the use of *at* or *on*. Likewise, they overused the preposition *at* while *on* would be a more appropriate choice in Standard English.

The next most common error category emerging from students' essays is omission errors (zero preposition). Forty-five instances of zero preposition in an otherwise obligatory context were counted during the analysis. Select sentences exemplifying omission errors are given below:

*Now, when I think (***of)*** my home…

*When we moved ***(into)*** this house…

*Walls were painted ***(in)*** green.

*They sit ***(down)*** and wait ***(for)*** their meal.

****(At)*** Every dusk and dawn we could see the awesome view of Bosphorus.

*If you have a chance to go ***(to)*** this nice city, don't miss that opportunity.

Lastly, addition errors, placing a preposition in a grammatically unnecessary context, were commonly observed in students' essays. The overall frequency of this type of errors is 36 within 63 student essays analyzed. Sample sentences of addition errors are provided below:

*Things that happened **in** there…

*In the upstairs, there can be three rooms.

*The location of my dream house is in rainforest, and **by** the near **of** river.

*Inside **of** the Harem, there is a sofa.

*At downstairs historical war tools will take visitors' attention.

*Opposite **of** the study desk, there is a beautiful bed.

*TV console is **on** the opposite **of** my armchair.

Especially the concepts of "*downstairs"* and *"upstairs"* seem to be problematic in Turkish students' constructions. Whereas they can convey the spatial reference on their own without the need to add any other preposition, the participants in the present study added redundant prepositions which may correspond to the locative case marker in Turkish. Furthermore, Turkish EFL students participating in this study seem to

experience confusion as to the use of *here* and *there*. They inserted the locative preposition *in* in a redundant manner in front of *here* and *there*.

Discussion

The analysis of Turkish EFL learners' descriptive essays revealed a high proportion of overgeneralization of some prepositions, such as *in* or *at* depicting a generalization of structures from the source language to the target language since the locative case marker *–de* is the only medium in Turkish to show the conceptualization of that spatial reference. Thus, in accordance with Alonso's (2009) findings, Turkish EFL learners also seem to have transferred the mental organization of concepts in their native language to English. As Alonso (2009) suggests, students' continuous confusion about the appropriate uses of the prepositions *in, on,* and *at* illustrates that apparently they have not yet realized that the conceptualization of space is different in English from that of in Turkish. Likewise, this demonstrates that they have not fully understood the fact that the three dimensional conceptualization of location in English is different from one dimensional mental representation of location in Turkish. The existence of such an overgeneralization also confirms what Kellerman (1995) suggests by his *Transfer to Nowhere* principle as students' generalization patterns show that they hang onto their native language perspective rather than the target language's to encode experiences linguistically.

In a similar fashion, Jarvis and Odlin (2000) detected an overgeneralization of the preposition *in* by Finnish learners of English and interpreted it as an interaction between transfer and simplification. The subjects in their study used the preposition *in* to express both internal locative and directional relations although English has other prepositions to express location, such as *at* or *on.*

Secondly, the analyses demonstrated an abundance of zero prepositions in the constructions of spatial references. Aside from being a form of linguistic simplification, the frequent occurrence of it also suggests a form of transfer since in Turkish the existence of some verbs in the sentence is sufficient to give the manner or direction of the action. Additionally, as the omission examples above demonstrate, the structure of sentences with some verbs requires a different case suffix apart from the prepositions that are obligatory to realize those sentences in Turkish. As a result, they might have chosen the simplification path and skipped providing any preposition in the corresponding English utterance. Hence, the Turkish students' omission of spatial prepositions in English may have originated from an interaction between simplification and transfer.

Likewise, Jarvis and Odlin (2000) exemplify two types of simplification in their data, namely *restrictive simplification* and *elaborative simplification.* The authors gave the aggregation of zero prepositions in the utterances of their subjects as examples of *restrictive simplification,* and the overgeneralization of the preposition *in* by the Finnish speakers in their study as examples of *elaborative simplification.* In the same vein, the omission of prepositions in obligatory contexts by the participants of the present study can prove the existence of *restrictive simplification* for the current data as they obviously reduced patterns of spatial reference grammatically. Similarly, overgeneralizations of especially *in* and *at* by Turkish students demonstrate that learners are creating approximations of a rule while they are at the phase of hypothesizing about that certain rule, hence making *elaborative simplification.*

Like the students in Yıldız's (2016) study, the participants of the present investigation committed mostly misuse/misformation errors which is explained by the phenomenon "thinking in Turkish" in his study. Furthermore, the fact that in this study Turkish students used the locative prepositions *in, at,* and *on* interchangeably as is shown by

their misuse errors confirms that there is *Conceptual Transfer*. The spatial reference of location is realized only through the locative marker –*de* in Turkish, so it is apparent that these learners have not fully mastered how each of the three prepositions function in English to refer to different spatial relationships. They seem to have taken all these prepositions as equivalent to the case marker –*de* which is coded to convey the locational relation in their mental representation. Consequently, they inaccurately provided any of those three prepositions arbitrarily in English whenever they wanted to convey a spatial reference of location.

The findings of this study are also complementary to Schumann's (1986) conclusions in terms of the frequent cases of zero preposition and overgeneralization of the preposition *in*. The participants in that study whose native languages lack spatial prepositions produced substantially more omission errors compared to the speakers of other languages, whereas Spanish learners overgeneralized the preposition *in* to the contexts where the syntactically constrained usage must have been *at, on* or *to*. Turkish speakers of the current study produced both zero prepositions and overgeneralizations stemming from the conceptual organization of space in their mental representation. Thus, like Schumann's findings, current data exemplifies an interaction between simplification and transfer since both the omission of prepositions and overgeneralizations are examples of both simplification and conceptual transfer.

When the patterns of errors other than those pertaining to the locative prepositions *in, on,* and *at* are analyzed closely, still traces of *Conceptual Transfer* can be found. For instance, regarding the misuse errors, it has already been noted that learners used the locative prepositions *in, on,* and *at* interchangeably in the place of one another in an incorrect manner which can be taken as evidence for *Conceptual Transfer*. The participants' misuse of other prepositions also points to a cross-linguistic influence at a conceptual level, like the use of *"with"* in the place of *"as"* or the use of *"by"* in the place of *"in"*. They all display a conceptual confusion since one-to-one translations of those Turkish suffixes marked by the instrumental case must have misled the students to use prepositions which are not acceptable in Standard English. Moreover, redundant insertion of some prepositions under the category of addition errors also reflects the spatial organization of those relations shaped by Turkish language. Specifically, the frequent use of *opposite* and *outside* with the preposition *of* resonates the encoding of that specific spatial reference in Turkish as –*nın karşısında* and –*nın dışında*. This again denotes the transfer of spatial conceptualization from the source language to the target language.

Conclusion

This study was an attempt to unravel the categories of prepositional errors in Turkish students' written utterances and to investigate whether those errors stem from cross-linguistic influence of Turkish on English. Within the scope of this investigation, cross-linguistic influence was analyzed from the perspective of Jarvis' (2007) *Conceptual Transfer Hypothesis*. The findings revealed three types of errors that learners of English made regarding prepositions, which are rank-ordered as misuse, omission, and addition errors. Additionally, the nature of learners' errors displayed instances of Conceptual Transfer as the students seemed to have transferred the conceptualization of spatial references from their native language to the target language, thus ended up with the construction of erroneous sentences in L2.

Pedagogical Implications and Limitations

The insights derived from this study can shed light on a number of pedagogical issues in the learning and teaching of English in Turkish context. Findings of the present study exemplify instances of transfer from the source language in terms of the use of the

prepositions. The specific error types covered here can inform language instructors as to the nature of problems that needed special attention. With such knowledge of the sources for confusion, they can, in a way, prevent mistakes by making the problematic areas more salient and helping them notice the cross-linguistic differences. It follows, then, that awareness raising activities can be integrated into grammar syllabuses to act as preventive measures. Obviously, the limitations pertaining to this design need to be kept in mind in interpreting the results. Since data was restricted to one-time writing on only one specific topic, the results are not generalizable to the overall performance of this group of learners or to other contexts. It needs to be replicated with a larger sample size over an extended course of time during which a representative sample will be elicited to be able to make safer comments based on the results.

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