

Aprendizaje basado en datos y enseñanza de preposiciones en ESL: un estudio de estudiantes árabes

Data Driven Learning and teaching of prepositions in ESL: A study of Arab learners

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RESUMEN.

Este documento explora la efectividad del enfoque de aprendizaje basado en datos en la enseñanza de preposiciones para estudiantes árabes. Se ha informado que las preposiciones en inglés son un rasgo característico que los estudiantes árabes de ESL deben aprender. Además, los estudiantes de nivel intermedio o avanzado también han informado sobre sus dificultades en el uso de preposiciones en inglés; Las razones pueden ser las diferencias perceptivas y culturales entre las dos comunidades lingüísticas. El objetivo del presente estudio fue comparar sustancias formadas por docentes preparadas a partir de recursos en línea junto con el corpus de TPP, para comparar el método de enseñanza de gramática basado en reglas prescriptivas tradicionales y DDL. Dos clases distintas; Se formaron grupos experimentales ($n = 41$) y de control ($n = 19$) que estudiaban inglés principal. La prueba estandarizada se realizó como una prueba previa para garantizar a los participantes el mismo nivel de competencia en el uso de preposiciones. Durante la duración del estudio durante un semestre, el grupo experimental fue expuesto a materiales preparados por el profesor junto con TPP para ver las preposiciones en contexto. Además, se les pidió que exploraran más a través de los materiales preparados para reforzar su aprendizaje a partir de los datos. Se administró una prueba posterior al final del curso. Los resultados mostraron que el grupo experimental superó al grupo de control. Se encontró que el rol activo de los estudiantes para dirigir su propio proceso de aprendizaje causó este resultado alentador y una mejor experiencia de aprendizaje para los estudiantes.

PALABRAS CLAVE.

Aprendizaje de ESL, estudiantes árabes, DDL, preposición, corpus.

ABSTRACT.

This paper explores the effectiveness of data driven learning approach in teaching prepositions to Arab learners. English prepositions have been reported to be a typical feature to learn by the Arab ESL learners. Moreover, intermediate or advance level learners have also reported their difficulties in the usage of English prepositions; reasons might be perceptual and cultural differences bet the two language communities. Teacher trained materials prepared from online resources along with TPP corpus, the aim of the present study was to compare DDL and traditional prescriptive rule based method of grammar teaching. Two distinct classes; experimental ($n = 41$) and control ($n = 19$) groups were formed who were study English major. Standardized test was conducted as a pre-test to



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ensure participants equal level of proficiency in using prepositions. During the study duration for a semester, experimental group was exposed to teacher-prepared materials along with TPP to see prepositions in context. Moreover they were asked to explore further through the prepared materials to reinforce their learning from the data. A post-test was administered at the end of the course. The results showed that the experimental group outperformed the control group. It was found that learners' active role to direct their own learning process caused this encouraging outcome and better learning experience for the learners.

KEY WORDS.

ESL learning, Arab learners, DDL, preposition, corpus.

1. Introduction.

Over the past two decades, data-driven learning (DDL, hereafter) has received a considerable attention in educational context in general, and in EFL teaching in particular. It has not only proved to be effective in learners' writing development, but in enhancing other language skills as well (Johns, 1991; Boulton, 2010; Smart, 2014; Luo, 2016; Barabadi & Khajavi, 2017). A corpus, which plays a significant role in this learning strategy, generates immense language learning materials that Mishan (2004) identified as richness of cultural and linguistic substance. These features are the real motivating features that encourage learners (Yeh, 2013). In addition to this, DDL endorses 'discovery learning' and provides learners to get into critically look at the things (Gilquin & Granger, 2010). Grammar learning has been found to be very impressive when are students are set free to develop their understanding of the patterns from various context (Schmidt, 1990). In this, the learners are encouraged to enhance their consciousness in language acquisition (Flowerdew, 2012), and be observant of the linguistic features and get aware of its modalities before producing them. The advantages of DDL are linked to learning motivation theory of recent time as well (Dornyei & Ushioda, 2011). Theoretically, this approach has gained a lot of support from EFL teaching community. However, on the one hand, there are researches which claimed that DDL tasks discouraged the learners (Kennedy & Miceli, 2001), but most of the DDL studies reported positive responses of learners (Rezaee, Marefat, and Saeedakhtar, 2014). Several empirical researches have confirmed that Arab EFL learners do face difficulties in using prepositions (Hamdallah, 1988; Al khataybeh, 1992; Zughoul, 1991, 2003; Rababah, 2003). The results of these studies reported that errors committed by learners are of incorrect use of prepositions that eventually affect their writing as well as speaking skills. Moreover, the results reported that these errors are caused by their mother tongue interference. Hashim, Kharma & Hajjaj (1997) found that most of the errors were syntactic in nature, and prepositions were found the most troublesome of syntax. In addition to this, the other recent studies have also reported that Arab ESL learners lacked correct use of verbs and prepositions (Muortaga, 2004; Mohammed, 2005; Zahid, 2006).



1.2 How complex is preposition for Arab EFL learners?

Several studies indicated English writing is one of the most difficult skills for Arab L2 learners (Al-Khairi, 2013; Alrabai, 2014; Alshammari, 2018a; Grami, 2010; Shammari, 2018b). More, particularly, English prepositions represent a challenge for Arab L2 learners who studied English (Zahid Javid & Umer, 2014; Abdul, 1990). Though the wide spread of ESL programs in the Arab world through, mastering English preposition still a problem for Arab L2 learners (Hashim, 1996). It is believed that L2 learners usually tend to relate the use of L2 preposition to their L1. To investigate this particular aspect, Asma (2010), tested Arab student, Algerian L2 learners, with twenty sentences and asked them to fill the gaps with appropriate simple English preposition. The resulted confirm the existence of students' transfer from L1 to L2 (Asma, 2010). What makes transfer more complicated for Arab learners is that Arabic language has two version of language in each country, standard Arabic and vernacular form of Arabic language. The latter is not unified and different from one country to another. Moreover, sometimes there are more than one dialect in countries that has big population and large area like Saudi and Egypt for instance (Thompson-Panos & Thomas-Ruzic, 1983).

English prepositions are not easily acquired for L2 Arab learners because of the cross-linguistics differences between Arabic and English language. This claim is based on the fact that negative transfer from the L1 is the main source of error in using English prepositions by Arab learners. Tahaine (2010) investigated if the mother language can be considered as source of preposition errors. He analyzed the sample of 162 students' compositions, who were majoring English in a university in Jordan. The study revealed that L1 language interference is the cause of the majority of the errors. More specifically, the participants tend to use improper preposition if the equivalent is not used in their mother tongue, delete the preposition if the preposition is not required in their L1 language, and add preposition if the equivalent is required in their L1 (Tahaine, 2010).

That being said, Arabic language has 20 preposition (Abdul, 1990) while English has more than 150 preposition. Moreover, because Arabic speakers uses mainly the vernacular version of the Arabic language on daily basis they usually use only six prepositions out of the twenty prepositions and these are: '*min, ila, ala, ba, la, fi*' (from, to, on, by, for, in) (Hasan & Abdullah, 2009). Therefore, the native Arabic language speaker tends to use the English equivalents of these prepositions in the majority of English sentences. In other words, Arab L2 learners have difficulty in mastering English preposition because Arabic preposition is equivalent to more one than English preposition and the literal translation from Arabic into English (Y. S. Tahaine, 2010). This difficulty is a hard obstacle of learning English writing in general and English preposition in particular (Asma, 2010). Since Arab L2 learners are using their L1 in while writing in the target language errors will take place. Tahaine (2010) suggested two solutions to overcome this problem: explicit instruction for learners should show them when they're transfer from their L1 to L2 can be negative and lead to committing errors. Moreover, he suggested that more exposure to the target language through reading and writing will help learners to overcome the problem of the negative transfer from L1 (Tahaine, 2010).





1.2.1 Spatial preposition in Arabic and English.

Arabic language has twenty prepositions three of them are locative preposition, namely, /baa?/, /fii/, /ʕalaa/ (Abdul, 1990). The English equivalent of the preposition /fii/ is 'in'. However, the preposition /fii/ in Arabic has extended role than its equivalent in English (Alshammari, 2017). For example, mainly it represents the meaning of the preposition in as in the following sentence: '/?lketa:t fii ?ldurdʒ/' > 'the book is in the drawer', and also the preposition /fii/ function as the preposition at in English: '/?lwaled fii ma:dresth/' > 'the boy is at his school'. Another role for the preposition /fii/ is 'on' and the following expression shows that: '/sa:fartu fii: ʔa tʕa:erah/' > 'I travelled on the plane'.

These wide scope of the preposition /fii/ in the Arabic language explains why some Arab L2 learners tend to use the the preposition "in" instead of the preposition "at" and "on". the preposition /ʕalaa/ which mean on in English indicates a higher in a place or position on surface (Alshammari, 2017). For example the following sentence shows this meaning of the preposition /ʕalaa/: '/?lketa:t ʕalaaʔa tʕa:wilah/' > 'the book is on the table'.

The preposition /ʕalaa/ also can cover other meaning of prepositions such as 'over', 'at' and 'onto' (Hasan & Abdullah, 2009). For example: '/qafaztu ʕalaa ʔal ha:ʔit/' > 'I jumped over the wall', '/ jalsna ʕalaa ʔa tʕa:wilah/' > 'We sat at the table', '/yusila sartʕano ʔal baħar ʕalaa ʔa ftʕ?' > 'The crab was washed up onto the shore'.

This difference of the prepositions number between Arabic and English make the L2 Arab learners tend to over generalize the locative preposition /fii/ and /ʕalaa/ which are equivalents to the English preposition in and on respectively. The preposition "at" is a problematic for Arab learners because it does not have exact equivalent in Arabic language. Therefore, Arab learners tend to use other prepositions even if it is the required one. For example, Arab learners tend to use the preposition "under" instead of "at" in the following sentence 'I'm under your service'. This due to the negative transfer from L1, Arabic, where in Arabic the right reposition for the previous sentence is 'tahaṭ' is the equivalent for the English preposition "under" (Tahaineḥ, 2014).

1.2.2 Time prepositions in Arabic and English.

The time preposition, 'on' used with days of the week. However, Arabic language used /fii/ preposition which is equivalent to the "in" preposition. Therefore, it is predicated that the Arab learners use expressions such as, 'I will meet you in Monday'. Similarly, it is predicated for Arab learners to use the preposition "in" instead of "on" with dates such as, 'I started my job in 23 May 2013'. In Arabic the preposition '/fii/' the equivalent of the preposition 'in' is used with dates. Regarding, the preposition 'at' it is a problematic in time context as it is in spatial because there is no exact equivalent for it in Arabic language. For instance, in special celebration the preposition 'at' is used while in Arabic the preposition '/fii/' is used. Therefore, it is expected that a native Arabic speaker will commit the following error in the following sentence: 'Fireworks will be huge in New Year festival'. The same error is predicated in the following sentence: 'The helicopter took off in midday and headed for the island'. This is due to the fact the preposition 'at' has no equivalence in Arabic language and subsequently Arab learners are predicated to use the wrong preposition (Tahaineḥ, 2010).



2. Review of related literatura.

In the past two decades, language teaching has witnessed extensive researches, both in theoretical as well as empirical studies, to address the issues in ESL teaching in particular to enhance the output within limited time for the learners (O’Keeffe, McCarthy, & Carter, 2007; Sinclair, 2004). As Romer (2009) puts that corpus linguistics has immense potential to bring in significant improvement in language learning and teaching experience and can play an important role in redefining pedagogical practice, Bennett (2010) also maintained the similar line and suggested that corpora could be effectively used in language teaching practices. He further explained that it could be done in three ways: corpus-influenced materials (materials to be used for teaching should be based on patterns and frequency as observed in the corpus), corpus-cited texts (dictionaries or grammar books), and corpus-designed activities (wherein the learners explore and analyze the data themselves and derive the patterns for active learning).

The idea of DDL was first coined by Johns (1990) and his paper ‘*Prints to handouts*’ was widely discussed in computer assisted language teaching (Hubbard, 2009) and task based teaching (Thomas, 2014). The other studies also acknowledged John as the originator of DDL approach (Corbett, 2009; Reppen, 2010; Bennett, 2010; Flowerdew, 2012; Boulton and Tyne, 2014; Friginal, 2018). Most of corpora were developed and thereafter widely used in language learning and teaching contexts. However, despite its awareness among the various stakeholders in the field of language learning, its hasn’t yet received due acknowledgement, primarily because most of the traditional teachers still believe in the prescriptive method of language teaching which is incompatible with DDL approach of doing the things wherein the learners are prompted to use their higher level skills and learn the language through observations and generalizations based on inputs available. There are many researchers find it relevant with certain modifications in the proposed draft of the same i.e. the corpus should be guided so teacher-prepared guided corpus would definitely yield desired results and make the learning experience more encouraging for the learners (Reppen, 2011). In other words, the teachers should bring in the results after exploring the corpus and the let the learners learn themselves the prepared materials. In order to properly address learners’ difficulty level, this approach would ensure appropriateness of the suitable content. In addition to that, DDL should not be limited to corpus but to all the language content available everywhere online or offline in printed forms, even Google as search engine can be a rich source for DDL (Boulton, 2011). This has, indeed, changed the approach towards language learning which is quite evident from the researches carried out in last one decade are related to use of online resources as effective tools in language teaching.

Nobody can deny the positive implication of DDL learning which ensures learners autonomy in the whole process (Sinclair, 2004). In most of language learning situations, it has been observed that DDL is not adopted or practiced well especially in Saudi Arabia (Aijmer, 2009; Alshammari, 2018). McCarthy (2008) stressed that the language teachers were either not aware of DDL approach and the ways to prepare learning activities by using corpus. This has led to the neglect of DDL in language classrooms.



2.1 DDL and prepositions learning.

In grammar learning, prepositions seem to pose difficulties for the ESL learners in both speaking and writing (Morenberg, 1997). Moreover because of their irregular pattern of usage in various contexts make them difficult to perceive. Their functions in various contexts show various meanings which let various rules formation which are difficult to master and eventually create an uncomfortable area for the learners (Lakoff, 1987; Swan, 1988; Parker, 1993; Taylor; 1993). Even after achieving standard level of proficiency, learners do commit mistake in correct usage of prepositions (Celce-Murcia & Larsen-Freeman, 1999). Teaching of grammar has always been a challenge in ESL/EFL context. In Saudi Arabia, the state of English teaching at school level is not very encouraging that has led to difficulties for the learners at the university. While various meanings and differences in their usage are perhaps the greatest challenge ESL learners face, a pedagogical approach wherein the learners develop perception of the usage using a variety of contexts from corpora would definitely facilitate their learning of prepositions.

Klammer et al (2004) listed 60 simple or one word prepositions (e.g. *at, in, for* etc.) and 39 complex prepositions (e.g. *along with, away from, out of* etc.). But, even the simple prepositions do pose difficulties for the Saudi learners as the time and space are differently categorized in Arab culture. Prepositions are linking words which show relation to place, time, adjunctness, possession or contrast (Kosur, 2008). Unlike the other grammatical categories, prepositions do not have a set of rules regarding their use, rather they are generally marked in various possibilities of their use which overlap with other one. This results in unusual constructions or little unfamiliar constructions for a native speaker or even proficient users.

Most of the prepositions in ESL context are simply a matter of memorization and getting used to their correct usage. There are certain prepositions which involve intuition as well so far as their usage is concerned which is found to be a significant part of ESL learning (Takahashi, 1967). However, most of the studies have focused on the most frequent use of prepositions and frequency of errors in correct use of English prepositions (Leikin, 1998; Furrow, Murray and Furrow, 1985, 1986). Their nature of English prepositions are so typical that Abdulkarim (2008) proposed for a thorough study, both in linguistic and methodology, so that the learners can achieve expert level of proficiency in speaking as well as writing skills.

3. Methodology.

3.1 Participants.

Fourth and fifth semester sixty English major students participated in this study. All were native Arabic speakers from Northern Border University, Saudi Arabia. Nineteen were female and forty one were male participants and their age ranged from 20 to 25 years. Since age and gender were not considered as variables for the current study as all the students were assigned their educational level based on their previous academic achievement at various educational levels. Forty one participants were assigned as treatment group and the other remaining were put in control group. Since there is a strict gender segregation policy followed at all educational set ups in the kingdom, the control group was taught by a female



colleague in the female campus and the experimental group was taught by the researcher. It was also considered that most of the learners had completed upper-intermediate level of English language skill courses in their preparatory courses. In order to assess participants' knowledge of preposition, a self-designed test was administered.

3.2 Instruments.

As a test was administered to assess the students' understanding of prepositions usage after the DDL approach was followed, the test included items related to time, space, and other prepositions. Total score of the test was 60 for 60 items; each one was assigned a value of 1. Before the study, students' equal level of understanding was ascertained with a test prepared with 140 values for 140 items in variety of contexts. Considering the length of pre-test and the attempts students made in the test, the post study test items were reduced to 60 values for 60 items. The validity of the test was checked by the subject experts. The researcher used corpus-based approach for the experimental group in order to expect improvement in students' understanding of correct prepositional usage. Longman corpus of reading texts, grammatical usage of collocations, and prepositions in contexts were used to make use of data. The students were also served with materials prepared from various other sources available on internet to design data for the purpose of the study. The aim of this research work was to see if data driven study works better than the traditional approach which let the learners expose to certain limited forms only and contexts, not enough to have a clear understanding of variations in prepositional usages. The control group was exposed to prepositions as grammatical category which is to be learnt from the grammatical descriptions and then after use them in various contexts, whereas the experimental group was made to use the corpus to learn the correct use of prepositions. Of course, to reinforce the learnt concepts, various activities were also incorporated during the learning sessions where they would be able to work on their learnt concepts. Both the facilitators used the same textbook to teach them grammatical concepts. The facilitator in experimental group used his own corpus as supplementary study materials.

3.3 Procedure.

The study aimed to compare corpus-based approach with traditional approach toward teaching grammatical concepts to English major students. The traditional approach used dictionary and grammar books which were prescriptive in nature and didn't give much scope to the learners to have exposure to variety of contexts. At the beginning a test was administered to assess their levels; and the results showed that all the groups possessed equal understanding of prepositions. After that, 12 teaching sessions, each one of 50 - 75 mins duration for each group was conducted on both the groups.

A large body of native corpora is available online such as American National Corpus (ANC), Corpus of Contemporary American English (COCA), and British National Corpus (BNC). The researcher introduced English Preposition Corpus (TPP), as provided in SKETCH ENGINE (<https://www.sketchengine.eu/english-preposition-corpus/>) showing how the prepositions work in English in the first session to the students. Especially, the annotated corpus emphasized the two important features; namely, sense and context. For instance, user can compare the use of *in* followed by a place or time or followed by a word describing an object



or people (e.g. *in the group*). The corpus was annotated according to *Pattern Dictionary of English Prepositions* (PDEP) to describe the behavior of English prepositions. The following is the sketch how the corpus works.

First: the corpus was compiled with word sketch grammar (set of rules for English language) to generate annotation

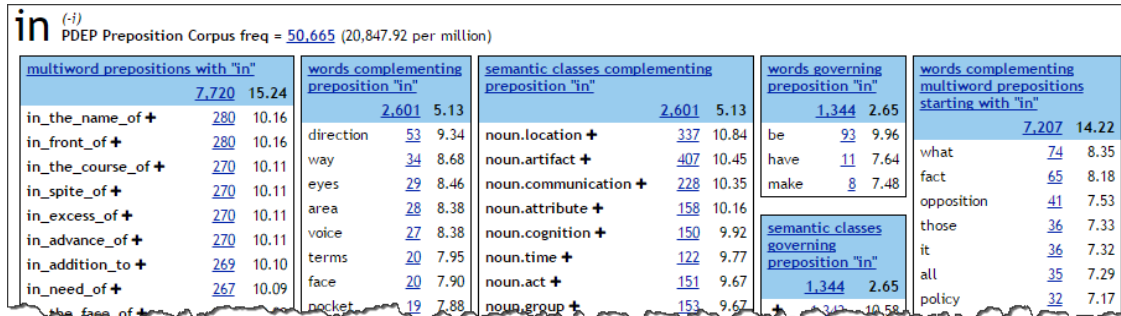


Fig 1. Word sketch for prepositions in TPP.

Second: the attributes and class references could be seen. The screenshot shows below:

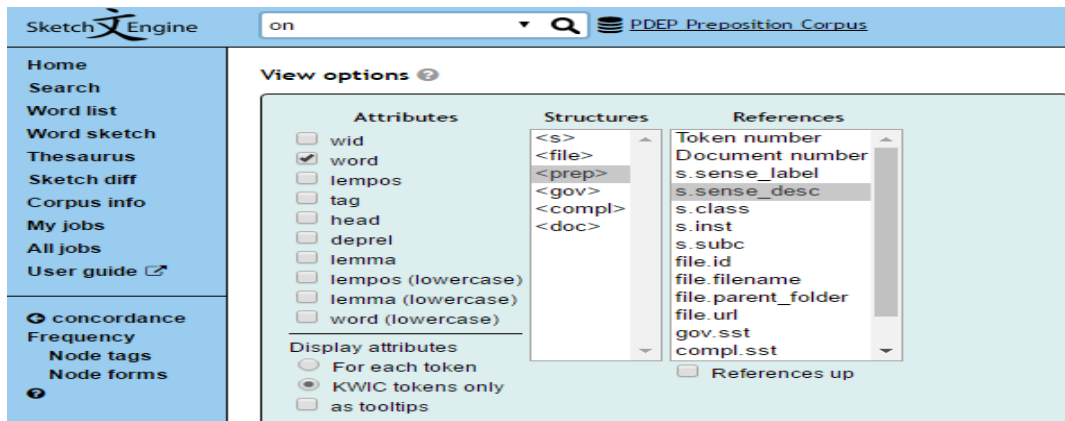


Fig 2. Screenshot of the features of TPP.

Third: annotation of prepositions

Broad category	Prepositions	Preposition complement
Countries	in	Saudi Arabia

Table 1. Annotation pattern of prepositions.



There is “s.sense_desc (sense description)” feature available in the corpus which provides a link to the given sense in context.

English time and place prepositions such as *in, on, at, with, within, around, about, under, inside, outside, underneath, to* were given emphasized and the extended meaning of *in/on/at* were also asked to follow and observe the patterns. Since time and place is critical for Arabic learners to follow so they were given more emphasis but they were also asked to check with their extended meanings.

Researcher prepared corpus included sample text for learners to evaluate other possible meanings in context by marking prepositions in the text. The following are a few samples:

Sample 1

You can sit **before** the desk (or **in front of** the desk). The professor can sit **on** the desk (when he's being informal) or **behind** the desk, and then his feet are **under** the desk or **beneath** the desk. He can stand **beside** the desk (meaning **next to** the desk), **before** the desk, **between** the desk and you, or even **on** the desk (if he's really strange). If he's clumsy, he can bump **into** the desk or try to walk **through** the desk (and stuff would fall **off** the desk). Passing his hands **over** the desk or resting his elbows **upon** the desk, he often looks **across** the desk and speaks **of** the desk or **concerning** the desk as if there were nothing else **like** the desk. Because he thinks of nothing **except** the desk, sometimes you wonder **about** the desk, what's **in** the desk, what he paid **for** the desk, and if he could live **without** the desk. You can walk **toward** the desk, **to** the desk, **around** the desk, **by** the desk, and even **past** the desk while he sits **at** the desk or leans **against** the desk. All of this happens, of course, **in** time: **during** the class, **before** the class, **until** the class, **throughout** the class, **after** the class, etc.

(Excerpt taken from www.guidetogrammar.org)

Sample 2

Once upon a time there was a brave knight called George. George had lots of adventures as he travelled by horse across many lands.....

.....

.....

..... Today, the story of George's bravery is remembered and George is known as the patron saint of many countries.

Likewise 10 such samples were distributed among the learners to reinforce their learning and to encourage them to have further discussion on their difficulties. It means after having analyzed the prepositions using the corpus, the learners were further asked to revise their understanding of prepositions in a context. The text served a basis for their brainstorming and having very useful discussion. The other samples included such as *A Short Story: Bad Temper, The Donkey and The Horse* (taken from www.english-for-students.com). The other small passages were taken from *TurtleDiary.com*. Three to five more exercises given as





class activity to complete, peer-review, and discuss about their mistakes and feedback to further reinforce their learning through activities (Sample 3). These activities specifically focused on *in*, *at*, *on* prepositions which are found to be typical for Arab learners to be comfortable and confident with.

Sample 3

Michael Phelps made sports history by winning twenty-eight medals, 23 of them gold medals,.....(1) the 2008 Olympics(2) Beijing, China,(3) the 2012 Olympics.....(4) London, and(5) the 2016 Olympics.....(6) Rio de Janeiro. Born(7) June 30, 1985, Phelps was just 15 years old when he qualified for the Sydney Australia Olympics.....(8) 2000. Phelps shattered the 200 meter butterfly by swimming it.....(9) record time..... He went on to win five more gold and one silver medal.(23) August 13,.....(24) the 4 × 100-meter medley relay, Phelps ended his career with another medal, his 23rd gold and his 28th medal overall. Incredibly, (25) age 31, Michael Phelps broke a 2,168-year-old ancient Olympic record, set by Leonidas of Rhodes, who had held the most Olympic individual titles of all time. (excerpt taken from www.grammar-quizzes.com).

4. Results.

Tables 2 & 3 indicated that independent sample t-test scores for both the groups in pre-test was almost the same and no significant difference was noticed in experimental group ($M = 45.4$, $SD = 4.6$) and control group ($M = 45.7$, $SD = 3.6$); $t(60) = 0.21$, $p = 0.8344$. The amount of the differences in means ($M \text{ diff.} = -0.3$, 95% confidence interval = -2.04 to 2.64) was too less.

The results of preposition pre-test indicated that scores for both the groups were the same. The mean score of control group, as shown in table 2, is little higher. However, the difference is not statistically very significant as marked by independent sample t-test. The instructor introduced a common textbook for both the groups during the semester, and it was also ensured that both the groups have same level of understanding of prepositional usage. In the post test, both the groups were tested on the basis of marking correct prepositions in a narrative piece or short passages (passages were taken from various online sources). The results of the study indicated that there was significant differences in the scores for participants of experimental group ($M = 49.74$, $SD = 2.14$) and control group ($M = 39.84$, $SD = 1.88$; $t(60) = 8.78$, $p = 0.00$). Tables 4 & 5 show the post-test statistical representation of the results.





	Groups	N	Mean	Std. dev.	Std. error mean
Pre-test	Exp.	41	45.4	4.6	0.71
	Cont.	19	45.7	3.6	0.79

Table 2. Pre-test scores

		Levene's test for equal variance							95% confidence interval	
		F	Sig.	t	df	Sig. (2-tailed)	Mean diff.	Std. error diff.	Lower	Upper
Pre-test	Equal variance assumed	1.39	0.24	-0.21	58	0.8344	-0.3	1.17	-2.04	2.64

Table 3. Independent samples test for preposition in pre-test

	Groups	N	Mean	Std. dev.	Std. Error mean
Post-test	Exp.	41	49.74	2.14	0.32
	Cont.	19	39.84	1.88	0.43

Table 4. Post-test scores

		Levene's test for equal variance							95% confidence interval	
		F	Sig.	t	df	Sig. (2-tailed)	Mean diff.	Std. error diff.	Lower	Upper
Post-test	Equal variance assumed	0.001	0.9749	8.78	58	0.00001	9.94	0.54	8.86	11.02

Table 5. Independent samples test for preposition in post-test.

5. Discussion.

The results are very much in line with other studies in terms of the effectiveness of data driven learning in developing languages skills such as vocabulary (Boulton, 2008, Chambers, 2003; Guan, 2013; Barabadi & Khajavi, 2017), grammatical skill (Lin & Lee, 2018), writing development (Luo, 2016, Luo & Zhou, 2017). The mean scores suggest that the students' average score in the pre-test is 32% which gets raised to around 82% after they are exposed to DDL approach of teaching. The control group's score rises to around 66% which is 16% less than the experimental group. Broadly speaking, it can be concluded that DDL approach has higher impact on the learning outcomes than the traditional or prescriptive method of teaching. Not many studies are available as such focusing on





preposition, especially in Arab EFL learners for whom this is a marked feature in learning difficulties. Regular classroom teaching have been reported to be less attentive in focusing prepositions while dealing with spoken skills wherein such grammatical features are simply overlooked or have not been given much importance (Alshammari, 2015). Even in writing classes the focus is more on writing the content than the form, which is to some extent valid as well because the objective in EFL writing classes is to encourage the learners to dare and write their arguments. Such grammatical errors have never been given importance. This results in failure in developing writing or even complete spoken fluency among the Arab learners (Alshammari, 2016). Saudi learners who go abroad for higher studies struggle to develop language proficiency, because by that time false structures get fossilized which they find difficult to unlearn (Alshammari 18a).

The data suggest that DDL approach is definitely effective in prepositions teaching to the learners than the regular grammar book based teaching which prescribe rules that are not easy to remember along with their contextual use. Context matters a lot in the use of prepositions so it plays a crucial role in developing better understanding of prepositions. DDL provides the learners with opportunity to develop their sense of meaning from the contexts. One possible reason why experimental group outperformed the control group might be because of the connection they could build between the form and their meanings in context (Lin & Lee, 2018). Moreover, the experimental group had a chance to see various prepositions in various contexts; for instance use of 'at' in the context of time as well as place and also to compare different context of 'at' in terms of time & place. Rule based learning with the control group might not have all exposure of the possible contexts which was somewhere not possible for the instructors even to bring in during the session. In a similar vein, Boulton argues (2008) that DDL method leads to more profound learning as concrete real life contextual examples help the learners to connect to their appropriate usages. These, in turn, enhance the likelihood of their better understanding of prepositions. All these advantages and learners' autonomy over the learning process not only enthruse interest but also a sense of responsibility among the learners to use their higher level of cognitive skills in learning process.

The DDL activities applied used this study can be seen as communicative approach of instruction (Nation, 2001). Form is the focus here which is reflected in learners' meaningful input and output. It can be used not only as supplementary but complementary as well in developing overall fluency. In all the language learning classrooms exploratory activities should be given emphasis, of course guided by instructors (Schmidt, 2001) to achieve the communicative goal. Mostly in EFL contexts, grammatical elements which do not cause completely distortion of meaning are generally overlooked such as 'use of articles', 'use of punctuation marks' 'use of prepositions' so and so forth (Willis, 2011). Careless use these structures in appropriate contexts lead to fossilized structures in perception as well as their active use of the learners. Prepositions pose many perceptual difficulties for Arab learners as the idea of time and space is differently perceived in both the cultures. In addition to that, the extended meanings of various prepositions pose a lot of difficulty even to fluent non native speakers.



DDL approach has brought a dramatic change in a language classroom setting. Now the learners have major role to play during the whole learning process (Guan, 2013; Willis, 2011). Since the learners drive the direction of learning, the teachers guide them to using feedback as well as clarification on the rules in the given contexts. The learners derive their understanding of the patterns and then find the appropriate usage attached to forms. Learners take the charge of their learning which enhances their self confidence and enthruse incredible interest in English learning. During this process, teachers become facilitators whose role is to just guide them through learning and notice their learning pattern. Virtually, DDL approach creates a real life situation wherein the learners have exposure to variety of language use in various contexts. And the learners learn the structures and patterns through context. In this digital age, technology has a major role to play in pedagogy, and DDL provides a framework to implement self learning effectively.

In this study, teachers' prepared corpus from various internet sources reinforced the learnt patterns in a given context which provided the learners a chance to make use of it variety of unknown situations. Prepositions in isolation were the focus of this study; the collocation part was simply not included because of the time constraint as well as to check the effectiveness DDL. Certainly, this would be equally applicable in teaching collocation as well, as it is more related to vocabulary building (Barabadi & Khajavi, 2017). The prepositions which are commonly of varied nature in terms of use such as *in*, *on*, *at* were selected specifically to focus on so that they discuss all the possibilities and overlapping. This resulted in a fruitful discussion as well as why one is more appropriate than then other one.

The present study explored the benefits of DDL approach in teaching prepositions (as opposed to grammar translation methods). The results supported the claims of Gilquin & Granger (2010) that DDL motivates the learners to think actively during the grammar learning. Lin & Lee (2015) studies the teachers' perception on DDL and Grammar Translation method and found that teachers also feel that 60:40 percent respectively would definitely yield desired results. They feel that there are certain cultural and perceptual concepts which need grammar translation method while teaching grammar. However, there is no doubt that this approach needs a lot of extra preparation and extra resources to effectively implement such practices.

6. Conclusion.

DDL is an innovation in the field of language learning which ensures learners to use their higher order of cognitive skill to evaluate, analyze and synthesize the concepts and observe the patterns to derive rules for themselves. In this process they command the learning process and act as investigators. This approach set and environment for the learners to feel encouraged and be observant of the language use to discover they own understanding to deal with complexities of language. The findings of the study suggest that DDL is highly effective in teaching prepositions and other grammatical categories where overlapping and exclusivity of rules are not that easy to remember and use in real life contexts. DDL provides them with various contexts to get used to the pattern to develop proficiency in language use, be it writing or speaking skills. Learner corpora is recommended to be made by non native speakers, as Chinese ESL learners have Chinese Learner English Corpus (CLEC) etc. to



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address Arab learners' concerns and to enhance their learning experience as well. Schmidt (2001) also observed that DDL approach helps the learners aware of features of target language. A proper training is definitely needed for the instructors to effectively implement this in their classrooms and also learn how to develop their own corpus to suit the learners' needs.

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References

- Abdul, Z. (1990). *An Analytic Study of Errors by Iraqi Students Made in English Prepositions of Place Relation*. University of Glasgow.
- Al-Khairi, M. H. (2013). English As a Foreign Language Learning Demotivational Factors As Perceived By Saudi Undergraduates. *European Scientific Journal*, 9(32), 1857–7881.
- Alrabai, F. (2014). Motivational Practices in English as a Foreign Language Classes in Saudi Arabia: Teachers Beliefs and Learners Perceptions Fakieh Alrabai. *Arab World English Journal*, 5(1), 224–246.
- Alshammari, A. K. (2015). Developing the English Curriculum in the Kingdom of Saudi Arabia: Possibilities and Challenges, *Arab World English Journal (AWEJ)*, 6(4), 365–372.
- Alshammari, M. (2017). *Spatial scenes in Arabic and English*. Florida International University.
- Alshammari, M. (2018a). Experiential Study in Learning English Writing: An Inquiry into Saudi Learners' Concerns. *International Journal of English Linguistics*, 8(4), 181–191. <http://doi.org/10.5539/ijel.v8n4p181>
- Alshammari, S. R. (2018b). The Effectiveness of STOP and DARE in Planning and Drafting Argumentative Writing: A case of Saudi College Level Students. *Arab World English Journal (AWEJ)*, 9(1), 350–364. <http://doi.org/10.24093/awej/vol9no1.25>
- Alshammari, S. R. (2016). The different approaches of teaching writing in the classroom. *Language, Individual & Society*, 10, 18-24.
- Asma, T. (2010). Transfer of Simple Prepositions from Standard Arabic into English : The Case of Third Year LMD Students of English Language at Mentouri, 2009–2010.
- Barabadi, E. and Y. Khajavi. (2017). The effect of data-driven approach to teaching vocabulary on Iranian students' learning of English vocabulary. *Cogent Education*, 4, 1283876. doi: 10.1080/2331186X.2017.1283876
- Bennett, G. (2010). *Using corpora in the language learning classroom: Corpus linguistics for teachers*. Michigan: University of Michigan Press.
- Boulton, A. (2010). 'Data-driven learning: taking the computer out of the equation'. *Language Learning*, 60(3), 534-572.
- Boulton, A., & H. Tyne. (2014). *Des documents authentiques aux corpus: Démarches pour l'apprentissage des langues*. Paris: Didier.



- Dornyei, Z. and E. Ushioda. (2011). *Teaching and Researching Motivation* (second edition). Harlow: Pearson Longman.
- Flowerdew, L. (2012). *Corpora and language education*. Basingstoke: Palgrave Macmillan.
- Friginal, E. (2018). *Corpus linguistics for English teachers: Tools, online resources, and classroom activities*. Abingdon/New York: Routledge.
- Gilquin, G. and S. Granger. (2010). 'How can data driven learning be used in language teaching?' in A. O' Keeffe and M. Mccarthy (eds.). *The Routledge Handbook of Corpus Linguistics*. London: Routledge.
- Grami, G. M. A. (2010). The Effects of Integrating Peer Feedback into University-Level ESL Writing Curriculum : A Comparative Study in a Saudi Context, Newcastle University School of Education , *Communication and Language Sciences*.
- Guan, X. (2013). A study on the application of data-driven learning in vocabulary teaching and learning in China's EFL class. *Journal of Language Teaching & Research*, 4(1), 105-112. doi:10.4304/jltr.4.1.105-112.
- Hasan, A., & Abdullah, I. (2009). A Comparative Study of English and Arabic Use of Prepositions Amongst Arab Native Speakers. Retrieved from: https://www.academia.edu/898700/A_Comparative_Study_of_English_and_Arabic_Use_of_Prepositions_Amongst_Arab_Native_Speakers
- Hashim, H. (1996). *English Syntactic Errors by Arabic Speaking Learners: Reviewed*, 1424–1462.
- Hubbard, P. (2009). *Computer-Assisted Language Learning*. Routledge: USA.
- Johns, T. (1991). Printout to Handout: Grammar and Vocabulary Teaching in the Context of Data-Driven Learning. *ELR Journal (Birmingham)*, 4.
- Johns, T. (1991). Chapter 2: Should you be persuaded: Two examples of data-driven learning. *Classroom Concordancing*. Birmingham: ELR.
- Kennedy, C. and T. Miceli. (2001). An evaluation of intermediate students' approaches to corpus investigation. *Language Learning & Teachnology*, 5(3), 77-90.
- Lin, M. H., and Lee, J. (2015). Data-driven learning: changing the teaching of grammar in EFL classess. *ELT Journal*, 69(3), 264-274.
- Luo, Q. (2016). The effects of data-driven learning activities on EFL learners' writing development, *SpringerPlus*, 1255. doi:10.1186/s40064-016-2935-5
- Luo, Q. and J. Zhou. (2017). Data-driven learning in second language writing class: a survey of empirical studies, *IJET*, 12(3), 182-196.
- Mishan, F. (2004). Autheticating corpora for language learning: a problem and its resolution. *ELT Journal*, 58(3), 219-227.
- Reppen, R. (2010). *Using corpora in the classroom*. Cambridge: Cambridge University Press.
- Rezaee, A. A., H. Marefat, and A. Saeedakhtar. (2014). Symmetrical and asymmetrical scaffolding of L2 collocations in the context of concordancing. *Computer Assisted language Learning, Advance Access Published* 3. doi:10.1080/09588221.2014.889712.





- Schmidt, R. (1990). 'The role of guided induction in paper-based data driven learning'. *Applied Linguistics*, 11(2), 129-158.
- Tahaine, Y. (2014). A Review of EFL Arab Learners' Language: Pitfalls and Pedagogical Implications. *International Journal of English Linguistics*, 4(1), 84–102. <http://doi.org/10.5539/ijel.v4n1p84>
- Tahaine, Y. (2010). Arab EFL university students' errors in the use of prepositions. *Modern Journal of Applied Linguistics*, 1(6), 76–112.
- Thomas, J. (2014). Discovering English with the Sketch Engine. In S. Jager, L. Bradley, E. J. Meima, & S. Thouësny (Eds), *CALL Design: Principles and Practice; Proceedings of the 2014 EUROCALL Conference*, Groningen: The Netherlands, 363-367. Dublin: Research-publishing.net. doi:10.14705/rpnet.2014.000246
- Thompson-Panos, K., & Thomas-Ruzic, M. (1983). The Least You Should Know About Arabic: Implications for the ESL Writing Instructor. *TESOL Quarterly*, 17(4), 609–623. <http://doi.org/10.2307/3586616>
- Zahid Javid, C., & Umer, M. (2014). Saudi Efl Learners' Writing Problems: a Move Towards Solution. *The Global Summit on Education GSE 2014*, 2014(March), 4–5.
- Zhang, Y. and L. Liu. (2014). A corpus – aided approach in EFL instruction: a case study of Chinese EFL learners' use of the infinitive. *English Language Teaching*, 7(7), 152-158.

