

THE IMPACT OF DATA-DRIVEN LEARNING INSTRUCTION ON MALAYSIAN LAW UNDERGRADUATES' COLLIGATIONAL COMPETENCE

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Data-Driven Learning (DDL) approach is a pedagogic application of corpus linguistics in classroom. This paper aims at investigating the impact of DDL instruction (an integration of both paper-based (scaffolded) concordance materials or "soft" DDL and "hard" DDL (independent online searching) on the production of colligations of prepositions among law undergraduates at a university in Malaysia. In this experimental study design, data were collected from the pretest and posttest conducted before and after a seven week-course. The 40 respondents (third semester law undergraduates) involved in this study were divided equally. Twenty students (5 males and 15 females) were placed in the experimental group and treated with the module (concordance printouts of the colligational patterns) and the DDL approach—an inductive or a process approach. Meanwhile, the other 20 students (6 males and 14 females) were placed in the control group, and they were treated with the non-DDL module and taught deductively following the traditional teaching approach—a product approach. The data collected were then analysed using the Mann-Whitney U test (inferential statistics). The statistical analysis showed that the students in the DDL group performed significantly better than the students in the comparison group in the gap-filling task ($U = 120.5$, $Z = -2.209$, $p = 0.027$, significant at $p < 0.05$) and in the error-identification and correction task ($U = 124.5$, $Z = -2.070$, $p = 0.038$, significant at $p < 0.05$). However, no significant difference was found in the single-sentence writing (construction) task ($U = 135.5$, $Z = -1.770$, $p = 0.077$). This study recommends explicit teaching of colligations of prepositions via DDL approach (an integration of paper-based and online searching), as opposed to the non-DDL approach to law students.

Keywords: corpus linguistics, Data-Driven Learning (DDL) approach, concordancers, colligations of prepositions, paper-based ("soft") and "hard" DDL

INTRODUCTION

In this recent decade, the application of computer technology in language studies has been widespread. Corpus linguistics is one of the methodologies which arises and benefits greatly from this technical knowledge. Corpus linguistics is defined as a systematic analysis of the actual (real) production of language (either spoken or written) as opposed to intuition¹. It analyses language using a tool called a concordancer where a large number of actual instances of the searched data, called patterns consisting of the Key-Word-in-Context (KWICs) or the nodes and their co-texts are shown on the computer screen once typed. Corpus linguistics has contributed tremendously in extending or deepening knowledge of existing language items including distinguishing close synonyms, listing the most frequent words, detecting patterns of usage (collocations and colligations), etc. (Gabrielatos, 2005; Nesselhauf, 2004; 2003; Aston, 2000; Leech, 1997). It can reveal the patterns that could not be detected by introspection. The largest contribution of corpus linguistics is in ELLT (English Language Learning and Teaching), particularly in the teaching of English for Specific Purposes (ESP) courses through an approach called Data-Driven Learning (DDL) (Gabrielatos, 2005; Gavioli, 2005). Corpus linguistics enables ESP learners to experiment with data derived from specialised corpora directly themselves and are given opportunities to explore and work out with the concordance data (hands-on learning) to perform various language activities including, for instance, checking correct usage of words and grammar of their written tasks from the concordance lines. This corpus-driven approach to language learning was proposed originally by Johns (1991a) using the *Identify-Classify-Generalise* technique. His original idea of DDL was that language learners, who, according to him are essentially research workers, investigate patterns of language usage through paper-based concordance lines in the classroom, not on the computer. In today's term, however, DDL refers to concordancing activities carried out online and/or offline (paper-based concordancing in classrooms) (Boulton, 2011).

One of the main contributions of corpus linguistics in ESP is in the detection of patterns of usage, called collocations² and colligations³ (e.g., colligations of prepositions). Collocations are the essential elements in ESP texts for they represent the construction of knowledge and conceptual relations of specialised texts (Halliday, McIntosh and Strevens, 1964). They are the prevalent lexical items which convey the speech of the discourse community, that is the community that speaks the same language and share similar linguistic forms and functions (Swales, 1990). Learners who do not possess sufficient knowledge of specialised collocations are considered to be failing to conform to the discourse community, thus faltering their acquisition of the specialised discourse and knowledge required of them in the study of specialised disciplines (e.g., Law, History, Computer Science, Biotechnology, etc.). In other words, possessing

collocational competence of a specialised discourse is very essential "to increase the learners' potential to command special languages" (Fuentes, 2001: 106).

Adult English as a Second Language ESL law students in tertiary education need to possess collocational competence⁴ for their survival in academic and professional worlds. They have to write well-crafted problem question essays which are often required of them in legal courses, carry out competent legal research, and defend themselves, with sound arguments and reasoning, in mock trials, etc. Gaining mastery over collocations, the knowledge of which legal patterns or word combinations sound more natural and appropriate in specific legal texts, genres, settings, and contexts is extremely essential as it will indicate law students' mastery of language fluency. This ideal situation, however, is not often the case. Even advanced ESL law students, including the subjects in this study, lack collocational competence, particularly colligation of prepositional competence. They may be capable of producing well-formed sentences but their sentences lack naturalness, are non native-like, and show a deviation from the spoken and written convention produced by the legal discourse community (Gozdz-Roszkowski, 2004).

Prepositions⁵ are small words but they are one of the most essential words in specialised discourse (Hunston, 2009; Flowerdew, 2009), especially in legal discourse (Gozdz-Roszkowski, 2003; Bhatia, 1993; Charrow and Charrow, 1979). They are so prevalent in legal genres (e.g., acts, statutes, reports, academic textbooks, etc.) that more often there are more than ten complex prepositional phrases within a sentence. The frequent presence of complex prepositional phrases instead of the simple one carries a specific reason; that is, to avoid ambiguity and lack of clarity of the text (Bhatia, 1993). Their prevalent features in legal discourse reflect the very characteristic of legal register; that is, containing lengthy sentences—50 words on average (Danet, 1985) and the prominent use of nominalisations (Gustafsson, 1983) that may lead to law students' misinterpretations while reading legal texts (Beasley, 1993). The following two extracts show the frequent presence of these patterns (10 and 19 underlined patterns consecutively) in a legal sentence⁶.

Misrepresentations made, or frauds committed, by agents / acting in / the course of their business / for their principals, have the same effect on agreements / made by such agents / as if such misrepresentations or frauds have been made or committed by the principals; but misrepresentations made, or frauds committed, by agents /, in matters / which do not fall within their authority, do not affect their principals.

Contracts Act 1950 (2009: 82)

The Community shall have as its task / by establishing a common market and an economic and monetary union and by implementing common policies or activities referred to / in Articles 3 and 4, to promote throughout the Community a harmonious, balanced and sustainable development of economic activities, a high level of employment and of social protection, equality between men and women, sustainable and non-inflationary growth, a high degree of competitiveness and convergence of economic performance, a high level of protection and improvement of the quality / of the environment, the raising of the standard / of living and quality of life, and economic and social cohesion and solidarity among Member States.

Article 2 of the European Union
(Official Journal of the European Union, 2006)

Prepositional patterns⁷ are of two types: (1) the combination of single-word prepositions with technical vocabulary (e.g., *consideration, case, approval, etc.*), with academic vocabulary (e.g., *relate, evidence, fees, persistent, etc.*), or with common words which have become specialised in legal discourse (e.g., *agree, come, enter, etc.*), and (2) complex prepositional phrases which consist of many words (e.g., *in pursuant of, in accordance with, on the basis of, etc.*) but contain only a single meaning. These two types of colligations function as the construction of knowledge (Halliday, McIntosh and Stevens, 1964; Halliday, 1994) and "...the articulation of conceptual relations in legal discourse..." (Jones and McCracken, 2006: 17). These colligations are very essential elements in legal discourse since they perform various pragmatic functions (Leckie-Tarry, as cited in Ghadessy, 1993; Akmajian (1995). They function as *referential* (to convey information), *conative* (*persuasive*), and *metalinguistic* (discussing language itself) (Thorne, 1997). Furthermore, Gozdz-Roszkowski (2003) and Durrant (2009) state that complex colligations of prepositions⁸ perform many *textual* (text organisers) and *referential* functions. The examples of text organisers include *an appeal to an authority* (i.e., *in accordance with, subject to the provision, pursuant to section X, etc.*) and examples of *referential* functions include *in the presence of, for the benefit of, on the part of, etc.*

Despite their significant communicative functions, prepositions are always considered as the hardest grammatical element to be acquired even with advanced ESL adult learners (Celce-Murcia and Larsen-Freeman, 1999; Lindstromberg, 1998; Taylor, 1993). They are notoriously difficult for their semantics and functions (usage) are largely arbitrary and difficult to characterise (Bloomfield, 1933; Frank, 1972; Chomsky, 1995), for example, the phrasal verbs. Phrasal verbs take specific prepositions (e.g., *put up + with, give in + to, keep up + with, etc.*) to form a meaningful unit, the idiomatic expression. The meanings, however, cannot be derived from each of the word in the patterns (e.g., *give in*

means *surrender* or *yield* instead of *give something inside*). This indeed has confounded many ESL learners. In legal discourse (i.e., law of contract genre), *comes to the knowledge of* is a phrasal verb because *comes to* means reach, not *comes towards something* where *to* is the preposition. Similarly, the phrasal verb *enter into* in the pattern *enter into an agreement* means *to agree to be part of the agreement* instead of *entering a place* (a physical activity). Understanding and making use of these phrasal verbs are always challenging to ESL law students.

Meanwhile, a study into their colligation of prepositional constructions in the problem question essay conducted at the beginning of the study showed that though the subjects in this study were capable of producing colligations of prepositional patterns, these patterns were mainly inaccurate, thus conveying inaccurate semantic (meanings) and functions of the text. See the extract of a student's essay below to show the prevalence of the prepositional patterns (as appeared in every single line and underlined) and the erroneous patterns (marked *).

(b) In situation of where Mr. Chen telephoned Mr. Daud on 22nd accepting the offer but Mr. Daud has insisted that Mr. Chen accept the offer in writing, it falls under acceptance of the proposal/in prescribe manner. The issue is whether the telephoned made by Mr. Chen has a binding contract for his acceptance. In the Contract Acts 1950 S. 7 (b) where to *convert a proposal to promise, the acceptance, stated that the promisee must do as/ according to the promisor demand/of manner/*on acceptance. Since in this case Mr. Daud has asked Mr. Chen to post a letter of acceptance, then Mr. Chen must do as the order. If not, there is no contract between the parties as the acceptance is no absolute. This can be seen * in case of Tinn v. Hoffman.*

The student's erroneous pattern can be observed, for example, in the pattern "in case of Tinn v. Hoffman" (line 9, paragraph 2). This is an incorrect usage since the context and meaning that this student had intended to express should be in the following pattern—*in the case of* which means *Tinn v Hoffman's case*. The use of "in case" requires a different sentence pattern, i.e., ***In case of** Mr. Tinn's disappearance, the court may postpone the case*. *In case* in this sense means *due to*. Confusion due to the mixing up of the forms and meanings is the main cause of intralingual interference, and this can be traced to the complexity of the source language itself (Richards, 1974), and in this case, the legal English (Bhatia, 1993). This clearly provides evidence that the learner lacked colligation of prepositional competence crucially required of them in the study of law.

LITERATURE REVIEW

Bahns and Eldaw (1993) and Brown (1974) state that collocations need special attention in EFL classrooms, especially with those constructions that are most problematic to EFL learners. Meanwhile, Lewis (1993), in his Lexical Approach, suggests that it is collocation (prefabricated patterns or chunks of language, the patterns stored in the native users of a language), not grammar which should be explicitly taught in EFL classroom. There is no evidence, according to him, that EFL students' grammar can be corrected. They will reach the level of language fluency (reaching native-like production) once their stock of collocations is full. The question now is: If collocations should be explicitly taught, then what is the best teaching approach to teach collocations?

The Direct Method (DM) and Audio-Lingual Method (ALM) [termed as the traditional methods (Lightbown and Spada, 2006)] which adopt the structural syllabus, have been claimed so far as not very effective in teaching colligations of prepositions (Mukundan and Roslim, 2009) for rules are overtly prescribed by teachers in dense contexts, and learners are required to memorise and reproduce them as fluently as possible in inauthentic contexts. This method, a drilling method, overly emphasised on prepositional forms, not on their meanings and usages. Data-Driven Learning (DDL) approach, however, has been suggested by researchers as the best approach to teaching collocations since it has the potential to describe colligations of prepositions, their semantics and functions through repeated exposures to the patterns in much richer and authentic contexts (Durrant, 2009; Koosha and Jafarpour, 2006; Gaskell and Cobb, 2004; Danielsson and Mahlberg, 2003; Someya, 2000; Celce-Murcia and Larsen-Freeman, 1999; Cobb, 1997) especially in ESP courses (Gavioli, 2005; Tognini-Bonelli, 2001; Lewis, 2000). DDL involves exposing learners to large quantities of authentic data- "special purpose corpora". In this method, learning prepositional rules involve exploring and detecting the patterns among a large collection of data displayed on screen or as paper-based output in constructive and communicative learning strategies. DDL is claimed as capable of categorising the collocations of preposition and their semantics and functions neatly (Danielsson and Mahlberg, 2003).

However, direct use of DDL may harm students in so many aspects. Johns (2002: 1) admits that "the direct use of concordance data poses a number of challenges: technical, linguistic, logistic, pedagogical and philosophical". According to Boulton (2009b; 2010); Gaskell and Cobb (2004), DDL challenges both teachers and learners since technology-driven approach (hands-on concordancing) is now taking over a pedagogically-driven approach. Some teachers and learners may feel that the technical aspects are too daunting for them (Boulton, 2010) and may drive these "technophobic" teachers and students away from gaining benefits from the DDL approach (Bernardini, 2002; Boulton, 2008b; 2008c; 2009b).

Meanwhile, there is a laudable issue raised by many DDL proponents like Johns (1991a; 1991b; 1993; 2002); Boulton (2007a; 2007b; 2008a; 2008b; 2008c; 2008d; 2009a; 2009b; 2009c; 2010); Flowerdew (2009); Whistle (1999) that the true spirit of DDL is scaffolding (teacher intervention), not independent concordancing. In fact, according to Boulton (2011) and Johns (1991a; 1991b) the original proposal of DDL was for students to work with paper-based concordancing materials carried out in classrooms assimilating more teacher-led paper-based grammar rules used in the traditional approach (Smith, 2009; Tian, 2009; Koosha and Jafarpour, 2006). Learners should work initially with plenty of practice with paper-based exercises in order to get used to inductive reasoning before they are asked to cope with additional burden of manipulating a piece of software (Lamy and Mortensen, 2007). Thus, there should be a gradual process moving from "soft" to "hard" DDL (Gabrielatos, 2005) or, as claimed by Cresswell (2007), moving from "deductive DDL" (i.e., starting with teacher-led exercises) to fully "inductive DDL" (i.e., starting with the data on their own).

To sum up, the introduction of paper-based materials with prepared concordances and exercises may benefit ESL learners in so many ways: they may ease the learners' learning burden by reducing the amount of data to be mined and thus limiting the range of possible answers (Thompson, 2006), they may be used as reference at a later date, and finally, they may reduce technical, logistical, and financial obstacles (Boulton, 2010) and reduce the fears in the learners who are used to the traditional teaching method for decades (Boulton, 2009b). Due to lack of experimental research on DDL being carried out (Boulton, 2008a), and no research has been dealt with the use of "soft" and "hard" DDL in teaching law students, this study purports to investigate the impact of DDL instruction integrating paper-based concordance materials and online DDL on Malaysian law undergraduates' production of colligations of prepositions. This experimental study aims to answer the following question:

How does DDL instruction integrating paper-based DDL materials and online DDL affect the production of prepositional patterns of law undergraduates at the University of Sultan Zainal Abidin in the gap-filling, error identification and correction, and single-sentence construction tasks?

The theoretical premises which frame this study are Firth's Contextual Theory of Meaning (1957) and Vygotsky's Zone of Proximal Development (1978), the Social Constructivist theory. According to Firth, the meaning of speech events could be derived from the contexts of culture (situational/extra-linguistic). Meanings could also be realised at the linguistic level. The meaning of patterns or collocations could be derived from the environments (contexts) of the patterns in a given text (co-texts) which are recurrent and observable (concordance lines) within a wider context of culture (the community that speaks

the language). Thus, in the context of specialised languages, i.e., legal language, the meanings and functions of legal language could be derived from a wider context of culture (i.e., the legal discourse community that speaks the language). In the process of meaning making, learners are always incapable of performing challenging tasks and thus requiring "scaffolding" and "apprenticing" by teachers or facilitators before independent learning can take place. This scaffolding as theorised by Vygotsky (1978) may come in the form of guided tasks or tools to facilitate the learning process. In this DDL approach, the use of module-based concordance printouts and the tasks are the forms of scaffolding used in assisting learners acquiring the language.

METHODOLOGY

This study is designed as an experimental study (a quantitative study design). This study was conducted at the Faculty of Law and International Relations (FLAIR), University of Sultan Zainal Abidin (UniSZA), Malaysia, previously known as Universiti Darul Iman Malaysia, one of the public universities in the East Coast of Malaysia. This faculty is still new and expanding with a population of fewer than 300 students per semester. The samples in this study were 40 semester three undergraduate law students⁹ in FLAIR, chosen based on non-random sampling (the convenient sampling) because they represented the most suitable samples to be selected for this study. Ranging from 19 to 21 years old, they are all Malay students, their native language is Malay, and they had completed Law of Contract I and Law of Contract II courses offered in semesters one and two, consecutively. Their level of English proficiency ranged from intermediate to advanced, based on their English grade in the Sijil Pelajaran Malaysia (Malaysian Certificate of Education) and the MUET (Malaysian University English Test), the Malaysian university entrance test. The current minimal requirement for entrance into FLAIR is a MUET Band 4, though in the initial conduct of the study there were some subjects who obtained a MUET Band 3. The students had taken two English for Communication courses offered by the Faculty of Languages and Communication, the courses which are also made compulsory at UniSZA to all undergraduates in all fields.

The main instrument used for collecting the data was the pretest and posttest (a total score of 60 marks). The pretest/posttest is of the same test. The test consists of 10 items of the gap-filling task (worth 10 marks), 10 items of the error-identification and correction task (worth 20 marks), 5 items of determining the semantic function¹⁰ task (worth 10 marks), and 5 items of the single-sentence construction task (worth 20 marks) (see Appendix B for the pretest/posttest). In the gap-filling task, the subjects were required to fill in the blanks with accurate prepositions. They were instructed not to write anything in the blanks if prepositions were not necessary. For the error-identification and correction task,

the subjects were required to perform two tasks. First, they had to identify whether the underlined prepositions were correctly or wrongly used. If they found the prepositions underlined were correct, they were asked to mark C (i.e., for accurate prepositions) in the space provided. In contrast, if the prepositions underlined were wrong, their task was to mark I (i.e., for inaccurate prepositions) in the space. Furthermore, in Section 4, i.e., the single-sentence construction task¹¹, the students were required to construct sentences based on the words provided. The rationale for designing these tasks was threefold: (1) to uncover the subjects' awareness of the patterns (i.e., whether they realised that the words listed can colligate with prepositions or not to form patterns), (2) to examine their fluent production (i.e., through their production of the patterns and the extended phrases which either precede or proceed the patterns (co-texts), and (3) to investigate the grammatical accuracy of the sentence.

The pretest/posttest was given to the students twice, i.e., at the beginning and end of the seven-week experimental course. The items chosen in the test were based on the learners' erroneous production of colligations of prepositions produced in three problem question essays which the students were initially asked to write (refer to Table 1).

Table 1: Number of correct and incorrect colligations in three problem question (PQ) essays

Students N = 40	PQ #1 (per 400 words) 16,000 words	PQ #2 (per 300 words) 12,000 words	PQ #3 (per 300 words) 12,000 words	Total no. of words 40,000 words
Correct colligations	3,000	2,000	2,300	7,300
Incorrect colligations	1,400	700	800	2,900

The British National Corpus for Law was referred to (available at <http://www.lexutor.ca/>) for a list of the most frequent words and patterns in legal discourse. The reason for using this corpus was due to the fact that the law curriculum in Malaysia makes use of the British common law. See the result of the most frequent words and patterns in Table 2.

The rationale for choosing the most frequent errors as the test items is due to the assumption that these items constitute the prepositional patterns the students might have major difficulty with. This is in line with Bahns and Eldaw's (1993) suggestion to focus on teaching the most problematic collocations encountered by EFL students.

In order to study the impact of DDL instruction on the students' production of colligations of prepositions, the students were placed in two separate groups: 20 students (5 males and 15 females) were placed in the

treatment (experimental) group, and they were treated with the DDL approach, making use of the paper-based concordance module and online DDL. The other 20 students (6 males and 14 females) were placed in the comparison group, and they were treated with the traditional approach, making use of the structural syllabus-based module. The duration of the course was seven weeks. The two groups were given a two-hour treatment per week. Two weeks prior to the course, subjects in the DDL group were given a two-hour training course on the technical aspects of DDL, and to familiarise them with the online concordance page. Meanwhile, a one-hour pretest was also administered with the two groups a week after the training week. That was a week before the experimental course commenced. The rationale for conducting the pretest was to equate the subjects at the beginning of an experimental course as a means of avoiding biases (Creswell and Clark, 2005) in the end of the experimental course as they might differ in their colligation of prepositional competence at the beginning of the course (i.e., they would have pre-existing knowledge about colligations of prepositions). The teaching course commenced one week later after the pretest was administered to all the respondents (see Appendix A for the teaching schedule).

Table 2: The most frequent words in the BNC for Law

No.	Words and patterns	Frequency list (BNC)
1.	provision	999
2.	provide	885
3.	come	523
4.	seek	387
5.	bound	361
6.	aware	286
7.	contrary to	271
8.	binding	258
9.	discussion	252
10.	look	246
11.	enter	234
12.	reach	126
13.	approval	120
14.	discuss	92
15.	as opposed to	84
16.	bind	65
17.	contravene	20
18.	in contrast to	18
19.	abide	11

The experimental group was placed in the lab (weeks 1, 3, 5) and alternately in the traditional classroom (weeks 2, 4, 6), while the comparison group remained all the time in the traditional classroom. Since the results showed that there was no significant difference between the two groups in the pretest (gap-filling, $p = 0.123$, error-identification and correction, $p = 0.784$, semantic-function, $p = 0.384$, and single-sentence construction, $p = 0.9030$), it was concluded therefore that the two groups were at par with each other at the beginning of the course.

The main materials used in teaching the two groups were the two modules: the DDL module employing inductive learning techniques, and the non-DDL module employing the structural approach or deductive (Presentation, Practice and Production) techniques. The main teaching items included in the two modules were the same—the 19 most frequent colligation of prepositional patterns identified earlier. The 19 items were divided into six, altogether making six lessons of the module consisting of three or four erroneous patterns of prepositions in each. See Table 3 to show the distribution of the most frequent erroneous patterns per lesson of the modules.

Table 3: Distribution of the most frequent errors per lesson of the module

Lessons	Colligations of prepositions
1.	¹² * <i>bind</i> , <i>binding</i> + prepositions, and <i>bound</i> + prepositions
2.	<i>contrary to</i> , <i>in contrast to</i> , <i>as opposed to</i>
3.	* <i>seek</i> , * <i>contravene</i> , <i>discuss</i> , <i>discussion</i> + prepositions
4.	* <i>reach</i> , <i>come</i> + prepositions, <i>enter</i> + prepositions,
5.	<i>aware</i> + prepositions, <i>provide</i> + prepositions, <i>provision</i> + prepositions, <i>abide</i> + prepositions
6.	<i>look</i> + prepositions and <i>approval</i> + prepositions

As mentioned previously, the DDL approach follows Johns' (1991a) inductive technique: *Identify-Classify-Generalise*. In the application of this inductive approach, a learner as a "research worker" should first study the concordance lines given to them (i.e., in the form of the concordance printouts), particularly by investigating the KWIC (Key-Word-in-Context) or the node, i.e., an item under study, which is usually placed in the middle of the concordance lines. The observation will also be extended to the co-texts of the KWIC, i.e., the environments to the left and right of the KWIC. After that, students will be required to classify (group) the searched word, e.g., according to the parts of speech, tenses, word synonyms, etc. Once students have classified the KWIC, e.g., they know what constitutes the part of speech of the KWIC, then the final step is to deduce the rules (basically with their prior knowledge) governing the KWIC. This approach puts a learner at a centre stage (learner-centred) and the teacher a facilitator in the learning process.

The illustration of the inductive approach can be observed in the guided task prepared in Lesson 1 of the DDL module in the present study below. Prompt No. 4 helped the subjects focus on the searched word, i.e., *binding*. So, in the first step, the students were directed to identify the co-texts or environments of the KWIC, i.e., in the left and right of the word *binding*. After completing this, they were further directed to uncover what possibly the group or category the KWIC fit in. Up to this very stage, the subjects were capable to name the KWIC's group or category, i.e., an adjective. Once done, they were asked to make generalisations governing the rules of *binding*. Two examples of the generalisations made by the students include: (1) the adjective word, *binding*, is always preceded by the *be*-verbs, and (2) after the adjective word *binding*, there must always be a noun or a nominal group.

4. What is the part of speech of the word ***binding*** in the lines below?
Concordances: Taken from the Law of Contract Corpus (LCC)
14. which are made and are not intended (to be) rigid, ***binding*** arrangements. Salmon LJ
16. he presumption that it was intended (to be) legally ***binding***. The Court of Appeal
29. mediately posted an acceptance which (was) held ***binding*** because the delay

Figure 1: Prompts and concordance lines

Meanwhile, the students in the comparison group were expected to listen to the teacher-researcher's description of prepositions. They were provided with fewer sample sentences (though not made up ones because the samples were taken from their academic textbooks), and they were asked to do the practice later. This approach is a teacher-dominated approach.

The duration for teaching each lesson of the module was one hour except for Lesson 1, which was one hour and 30 minutes. The two main components included in the six lessons of the DDL (experimental) group were the introductory and task performance parts. In the DDL group, the task performance part in Task A played the most essential component compared to the introductory part since it applied the inductive learning approach (the application of constructive learning theory) where the participants were supposed to derive the colligation of prepositional rules from the concordance lines presented in the modules by performing the tasks given.

Meanwhile, in the Practice component (Task B) the students were given the opportunity to test the generalisation skills they had practised so far by performing several practices (gap-filling, error- identification and correction, determining the semantic function, and single-sentence construction). See Table 4 below for the module component of DDL.

Table 4: Components of Lesson 1 for the experimental group (DDL approach)

I. Introductory part	10 minutes
II. Performance part	1 hour 20 minutes
Task A:	Inductive learning process (40 minutes)
Task B:	Practice (40 minutes)
Practice 1:	Sentence-completion (15 minutes)
Practice 2:	Error identification and correction (10 minutes)
Practice 3:	Determining the semantic functions (5 minutes)
Practice 4:	Single-sentence construction (10 minutes)

In contrast, the module prepared for the comparison group differed from that in the DDL group in that the introductory part plays an important role for the Presentation (description) of prepositions followed by the Practice and Production components. The theory underlying the structural approach applied in the formulation of this module is the Behaviourist theory. In this approach, the students in the non DDL¹³ group were first introduced and presented with the items, and they were later instructed to do the practice (Practices A to D), applying the deductive approach, following the similar routines of the normal classrooms. The practice items, however, were similar in both the DDL and non DDL modules. See Table 5 below for the components of Lesson 1 which were also similar to the rest of the lessons in the non-DDL module.

Table 5: Components of Lesson 1 for the control group (traditional approach)

I. Presentation (50 minutes)
II. Practice and production (40 minutes)
Practice A: Sentence – completion (15 minutes)
Practice B: Error identification and correction (10 minutes)
Practice C: Determining the semantic functions (5 minutes)
Practice D: Sentence-writing (10 minutes)

The main materials used in the modules are the concordance data derived from the two corpora used in the study. The first one is the Law of Contract Corpus (LCC) which was compiled by the researcher herself based on the law of contract academic textbooks and books of cases used by the students in the Law of Contract courses. It consists of 256,083 words. The second corpus used was the British National Corpus (BNC) for Law available online at <http://www.lex tutor.ca/>. Though consisting of other genres; that is, other than the law of contract genre, this corpus is very useful for increasing their motivation and attracting students to perform their concordance search online besides using the module-based concordance lines.

The data gathered from the pretest and posttest was analysed using the Mann-Whitney U test, a non-parametric test operating similar as an independent sample t-test (a parametric test) to measure a difference in the mean scores between the two independent groups. I made use of the Statistical Package for Social Science (SPSS) version 16.0 for this purpose.

FINDINGS AND DISCUSSION OF THE RESULTS

This study purports to answer the following question: How does DDL instruction which integrates both the module-based and online DDL affect the production of colligations of prepositions of law undergraduates at UniSZA in the gap-filling task, the error-identification and correction task, and the single-sentence construction task? The study findings showed that there was a significant difference between the DDL and non DDL group in the gap-filling task ($U = 120.5$, $Z = -2.209$, $p = 0.027$, significant at $p < 0.05$). This clearly indicated that the DDL group performed significantly better than the non DDL group in this task as shown in the Table 6.

Table 6: Between group score (gap-filling task)

Task	<i>N</i>	Group	Mean rank	U value	Z value	P value
Sentence completion	20	DDL	24.48	120.5	- 2.209	0.027
	20	Non-DDL	16.53			

Note: Significant at $p < 0.05$.

This success can be explained due to the power of contexts. DDL allows greater opportunities for the subjects to observe the patterns of colligations which are presented in numerous and huge contexts through concordances. The fact that contexts or word environments play a significant role in informing the rules and lexical meanings confirms the Neo-Firthians' claims that texts are something to be trusted (cf. Sinclair, 1991; 2004) for texts inform readers about the environments of a specific word, word patterns (Hunston, 2008), and word "priming" (Hoey, 2005), i.e., how a small word like a preposition even chooses some words, but not others, to form meaningful patterns. Word "priming" has a psychological impact on learners as they now could observe that a word, in fact, chains or relates to some but more restricted partners (Hoey, 2005). By exposing learners to condensed contexts in corpora, they were given the opportunity to study the rules and meanings of the assigned preposition patterns.

Besides that, a significant difference was also found between the two groups in the error- identification and correction task ($U = 124.5$, $Z = -2.209$, $p = 0.027$, significant at $p < 0.05$). Based on the result, it was evident that the

DDL group performed significantly better than the non DDL group in this task. See Table 7.

Table 7: Between group score (error identification and correction task)

Task	N	Group	Mean rank	U value	Z value	P value
Error task	20	DDL	24.28	124.5	-2.070	0.038
	20	Non-DDL	16.73			

Note: Significant at $p < 0.05$.

The efficiency of DDL over the traditional approach in enhancing learners' colligation of prepositions in the above task can also be described in the second related effect of the power of contexts—an increased focus or enhanced retention of collocation patterns in learners' memory (Cobb, 1997). Learning words through chunking (collocations) is indeed a short-cut approach to language learning (Lewis, 1997; 2000). Learners would not learn the forms of lexical items as discrete ones and devoid of meaning but they now can perceive the connective links between grammar and vocabulary or the marriage between the forms and functions (meanings) of words (lexical items). The traditional separation between lexis and grammar cannot be upheld for language cannot simply be described in terms of a slot-and-filler model, where text is created by the interplay of grammatical rules and lexical choices, enabling a series of slots to be filled from a lexicon (cf. Sinclair, 1991: 109) but linguistic choices are often characterised by "co-selection", i.e., certain combinations of words selected as groups, patterns, or units of meanings larger than a single word form (Danielsson and Mahlberg, 2003). The fact that there is no discrete dividing lines or inseparability between the forms and meanings as apparent in the patterns of prepositions in numerous contexts as shown by the concordance lines in the DDL approach facilitates or ease learners' retrieval of collocations from their mental lexicon in time of use. This psychological effect of collocations (Wray, 2002) expedites collocation learning and had attributed to learners' enhanced input or collocation knowledge (Cobb, 1997).

However, based on Table 8, the Mann-Whitney U test showed that there was no significant difference in the gain score of the single-sentence construction task between the DDL and the non DDL groups ($U = 135.5$, $Z = -1.770$, $p = 0.077$). This clearly showed that the DDL group did not perform significantly better than the non DDL group in the single-sentence writing task. Even though there was a difference in the mean rank of the two groups, the difference was not significant.

Table 8: Between group score (single-sentence construction task score)

Task	N	Group	Mean rank	U value	Z value	P value
Sentence writing	20	DDL	23.73	135.5	-1.770	0.077
	20	Non-DDL	17.28			

Note: Significant at $p < 0.05$.

There are several explanations to explain this statistical result. According to Nation (2001), before a speaker could reach the state of fluency with a word, it is insufficient for him to meet the word frequently in contexts, but he has to have frequent use of the word in multiple contexts, either in speaking or writing. As the students were exposed to collocation instruction only within seven weeks, they might not be able to transfer the receptive knowledge they had had to the productive one. Moreover, as found by Gaskell and Cobb (2004) in their study, the skills to self-correct and produce good sentences with correct patterns and grammatical rules do take a longer time frame. The acquisition of the production skill may require more than one school term. In other words, "collocations do not cause a problem of perception (understanding) but that of production (Gabrys-Biskup, 1992: 35). Thus, though no statistical difference was shown in the result, it does not mean that DDL is not effective in enhancing the students' colligational performance. The students had been able to notice and beware of the colligations of prepositions; however, the intake was still insufficient for uptake or production (Lewis, 2000).

CONCLUSION AND IMPLICATIONS OF THE STUDY

What can be concluded from the findings and the discussion so far is that DDL instruction, through an integration of the module-based and online DDL approach (a progression from "deductive to inductive approach" or "soft" and "hard" DDL), has shown to be more effective than the non-DDL approach (traditional approach) in increasing the knowledge and production of colligations of prepositions of the law students. This finding supports Firth's theory (1957) that learning vocabulary (in this case, the colligations of prepositions) through exposure to multiple contexts is much more successful than learning the meanings in dense and inauthentic contexts. It also supports Vygotsky's Constructivist learning theory (1978) that learners, if in the process of learning, received the support from their teachers (capable adults) in the form of guided tasks in the process of learning, they would be capable of doing their learning independently. These study findings confirm several findings by Cobb (1997); Koosha and Jafarpour (2006); Yanhui (2008); Tian (2009); Boulton (2008a; 2009a; 2009b; 2010) and Nikoletta (2010) who reported similar success with DDL compared to the traditional approach.

Second, it can also be concluded that for DDL to be effective in enhancing students' sentence production, a longer time frame should be allowed before they can absorb and acquire the target linguistic items (Mahlevati and Mukundan, 2012). Acquiring collocations, similar to acquiring other lexical items, will follow some sequential stages. It will begin first with noticing of the collocations, storing them in their mental lexicon (intake), and finally producing them (uptake), the development which is not instant but incremental (Nation, 2001).

Finally, DDL is not related to learners' proficiency levels. Not only do advanced learners but also intermediate and lower proficient ones may get the benefits from DDL (Boulton, 2008a; 2009a; 2009b; 2010). This study has shown that DDL does not only benefit those who are more capable, but the less competent ones may also gain benefits from DDL. The deductive DDL approach conducted in the first phase gives the opportunity for the intermediate proficient learners in this study to gain assistance from the instructor prior to their gaining of the skills to deduce rules from the concordance lines independently. Lower proficient learners may also get the advantage from DDL if they are given assistance at the beginning of DDL lessons (Hadley, 2002).

There are several implications of this study. First, teachers and ELT practitioners may now learn that colligations of prepositions should be explicitly taught as these patterns constitute "a system of preferred expressions of knowledge" (Stuart and Trelis, 2006: 239) in the academic and professional legal field. Colligations of prepositions are indeed one of the most essential aspects of language in legal discourse and which are worthy to be seriously taught. A mere exposure to collocational items in texts or in lectures has not shown to be effective in expediting the acquisition of colligations of prepositions. Collocations have proven to be an important constituent of language learners' linguistic competence, thus requiring a more principled and effective way in promoting collocation learning (Lewis, 2000; Woolard, 2000).

In legal context, English for Academic Legal Purposes (EALP) practitioners teaching law courses can now observe that the students should not be let alone to acquire the patterns without any guidance, especially those who are used to the traditional teaching approach for so long. Law students definitely need the EALP experts to increase their awareness of colligations of prepositions, the most essential features in legal texts (Bhatia, 1993; Gozdz-Roszkowski, 2004; Jones and McCracken, 2006). In this case, EALP practitioners at tertiary education in particular should also be trained with DDL so that they have the knowledge on how to use DDL, and at the same time they would be able to develop teaching materials for teaching both the lexico-grammatical items (grammar and vocabulary), and also the legal discourse (linguistic devices beyond the sentence level). Materials developed for teaching law students of the mentioned linguistic items, especially legal writing materials, have been claimed to be lacking (Candlin, Bhatia and Jensen, 2002; Master, 2005; Belcher, 2006).

Thus, knowing the fact that DDL has vast potential to develop the linguistic knowledge of law students, it is high time for EALP practitioners to get involved and trained in using and exploiting corpora. "It is necessary to implement teacher-centred corpus activities in the classroom before truly learner-centred methods are envisaged" (Mukherjee, 2004: 239). Knowing the fact also that many law students are not all advanced learners when they first enrolled in a law school (as in the case of law students at the FLAIR, UniSZA), course instructors should compile a corpus consisting of their students' legal essay to be analysed. Students' obvious errors or problems in writing legal essays, i.e., the lexico-grammatical features and discoursal elements can be highlighted and corrected in a more concrete and principled way. Through this method, students will have the opportunity to be exposed to huge samples of collocation patterns from the authentic texts compiled according to the specific legal genres and the linguistic demands of the students.

There are, however, some limitations to this study. Within the seven weeks of the experimental course, DDL was found to be effective in enhancing the production of colligations of prepositions of law undergraduates at UniSZA. However, since no delayed posttest was carried out to determine the students' longer retention of the prepositional patterns, no stronger claim can be made that DDL is effective beyond the duration of the seven weeks. Moreover, since this study only involved a group of law undergraduates at this institution, the results cannot be generalised to the student population at large.

NOTES

1. Intuition refers to a native-speaker's perceived accuracy and acceptability of language use.
2. Collocations are word combinations defined as "the company a word keeps" (Firth, 1957: 31). Many definitions have been given to collocations since then, i.e., formulaic speech, gambits, lexical phrases, etc. But in this study, collocation is viewed as a psychological interpretation which sees the frequent co-occurrence of words as evidencing the existence of "...semi-preconstructed phrases that constitute single choices" for the speaker (Sinclair, 1987: 320), or "a psychological association between words" (Hoey, 2005: 5). Meanwhile, Hunston (2009) views grammatical collocations as textual patterning (lexico-grammatical patterns). Collocations can be divided into two types: lexical collocations and grammatical collocations (colligations) (Benson, Benson and Ilson, 1986).
3. Grammatical collocations, and they are divided into 22 types (Benson, Benson and Ilson, 1986), and colligations of prepositions is one of the sub-types.
4. Competence is defined as one's ability to produce language accurately and fluently (Lewis, 2000). In the context of this study, competence is defined as students' ability to produce accurate and fluent colligations of prepositions and have the knowledge of their semantics and functions. In this context also, since

to know one's field means to know the phraseology of the field (Francis, 1993), the knowledge of the forms (prepositional patterns) refers to the knowledge of their semantics (meanings) and functions (usages).

5. Prepositions are defined as "a word which relates a substantive, its object, to some other word in the sentence" (Roberts, 1954: 222). There are many types of prepositions: single-word (i.e., *in, on, of*, etc.), two-word (i.e., *because of, due to, owing to*, etc.), three-word (*as opposed to, at par with, in pursuant of*, etc.), and four-word (i.e., *on the other hand, on (the) grounds of, in the case of*, etc.). Two-word, three-word, and four-word prepositions are complex prepositions. Despite consisting of many words, they give only one meaning. Prepositions may also colligate with verbs, nouns, and adjectives to form colligations of prepositions (bound prepositions). In this paper, both complex prepositions and bound prepositions are treated as colligations of prepositions (prepositional patterns).
6. Another characteristic of legal texts is their lengthy sentences (Bhatia, 1993).
7. The operational definition of colligations of prepositions employed in this paper is as below:
 - a. prep + noun + preposition, e.g., *in contrast to, as opposed to, by virtue of*, etc.
 - b. noun + preposition, e.g., *approval of, discussion about*, etc.
 - c. adjective / participle + preposition, e.g., *contrary to, binding on, bound by*, etc.
 - d. verb + preposition (particles), e.g., *come to, enter into, look to*, etc.
8. Gozdz-Roszkowski (2003) called them lexical bundles instead of colligations of prepositions.
9. 40 out of 48 students- the total number of semester three students in that year (2009).
10. The semantic-function of colligations of prepositions is not discussed in this paper.
11. Section 3, which is not the scope of this paper, is the semantic-function task.
12. The words *bind, seek, contravene*, and *reach* were unnecessarily colligated with prepositions by the subjects in the essay tests.
13. Non-DDL group refers to the group that is treated with the traditional approach—a teacher-dominated approach which emphasises on teaching the forms rather than meanings and functions.

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APPENDIX A

TEACHING SCHEDULE

Week Date	Schedule/Activities	Time and venue	
		DDL	Non-DDL
W1 18/1/2010	Lesson 1	1½ hours Networked language lab Monday (2:00–3:30 pm)	1½ hours Classroom Monday (4:00–5:30 pm)
W2 25/1/2010	Lesson 2	1 hour Classroom Monday (2:00–3:00 pm)	1 hour Classroom Monday (3:30–4:30 pm)
W3 1/2/2010	Lesson 3	1 hour Networked language lab Monday (2:00–3:00 pm)	1 hour Classroom Monday (3:30–4:30 pm)
W4 8/2/2010	Lesson 4	1 hour Classroom Monday (2:00–3:00 pm)	1 hour Classroom Monday (3:30–4:30 pm)
W5 22/2/2010	Lesson 5	1 hour Networked language lab Monday (2:00–3:00 pm)	1 hour Classroom Monday (3:30–4:30 pm)
W6 1/3/2010	Review session	2 hours Classroom Monday (2:00–4:00 pm)	2 hours Classroom Monday (4:00–6:00 pm)
W7 8/3/2010	Lesson 6	1 hour Classroom Monday (2:00–3:00 pm)	1 hour Classroom Monday (3:00–4:00 pm)
	Posttest	1 hour in classroom (combining both DDL & non-DDL groups) Monday (4:00–5:00 pm)	

APPENDIX B

PRETEST/POSTTEST

Matric Number: _____

Semester: _____

Instructions: Answer all the questions below.

Section 1. Gap-filling Exercise

Instructions: Fill in the blanks with correct prepositions. Write an (X) in the blanks if prepositions are not necessary.

1. The letter did not constitute a contract binding _____ law but was only a record of terms.
2. There was an unresolved discussion _____ the case as to whether the lessee continued liable for the entire rent or merely for an apportioned part of it.
3. In the absence of fraud and misrepresentation, a person is bound _____ a writing to which he has put his signature.
4. Notice of the withdrawal must be given and must reach _____ the offeree before the stated date.
5. It was unnecessary for the House of Lords to discuss _____ the meaning and effect of fundamental breach.
6. The court will then look _____ the entire course of the negotiations to decide whether an apparently unqualified acceptance did in fact conclude the agreement.
7. His words were quoted with considerable approval _____ Lord Pearce in *Beswick v. Beswick*.
8. It has, however, recently been held in *Farley v. Skinner* that it suffices that the provision _____ peace of mind, or the prevention of distress is 'an important object' of the contract.
9. The promisee may provide consideration _____ giving up a job or the tenancy of a flat, even though no direct benefit results to the promisor from these acts.
10. It was a condition of the agreement that the sale should be subject to the approval _____ the Foreign Investment Committee.

(30 marks)

Section 2: Error Identification and Correction

Instructions: Identify whether the word in **bold** in each of the phrases underlined below is correct or wrong. If it is correct, write (C), and if it is incorrect, write (I) to replace IN the space provided next to the sentence. Then, make corrections to the errors you have identified earlier in the space below. Write an (X) in the space if the answer is correct. See examples 1 and 2.

Example 1. The plaintiff needs to rely **on** private investigators for information.
_____C_____

Correction: X

Example 2. The plaintiff needs to depend **at** private investigators for information. _____I_____

Correction: on

(1) The language in the Contracts Act 1950 appears to confine 'proposal' to an offer to be legally bound **to** a promise.

Correction:

(2) If they were not offers, then no contract could come **to** existence between the parties at the moment when the appellants' printing orders were issued.

Correction:

(3) In the case of Schawel v Reade, the defendant interrupted the plaintiff from examining the horse by saying, 'You need not look **for** anything: the horse is perfectly sound'.

Correction:

(4) Section 8(2) of the Sale of Goods Act provides **that** silence as to the price, and will not apply where an agreement states that the parties will subsequently agree the price to be paid.

Correction:

(5) If the terms or the circumstances of the offer do no more than suggest a mode of acceptance, it seems that the offeree would not be bound to this mode.

Correction:

(6) A written agreement was drawn up whereby the defendant agreed to take a lease of a house for a definite period and at a fixed rent, but "subject to the preparation and approval from a formal contract".

Correction:

(7) It is undoubtedly true that every man is by the law of nature bound to fulfil his engagements.

Correction:

(8) If the contracts are not continuous in their operation, they are not binding towards the minor unless he ratified them within a reasonable time after attaining majority.

Correction:

(9) The first problem is whether the offeree has at this stage accepted the offer, and the second is whether he has provided consideration for the offeror's promise.

Correction:

(10) As it is impossible for the offeror to ensure that the notice of withdrawal comes to the attention of everyone who knew of the offer, it seems to be enough for him to take reasonable steps to bring the withdrawal to the attention of such persons.

Correction:

(20 marks)

Section 3: Determining the Semantic functions of the Prepositions and Prepositional Phrases

Instructions: Provide the semantic functions of the prepositions and prepositional phrases in bold in the underlined phrases below. See example 1.

Example 1. That the parties eventually agree **on** the rent does not make a concluded agreement.

Answer: concerning/about

(1) The **provisions of** the Marine Insurance Act offer an obvious example of terms implied by statute as the culmination of a long process of development.

(2) There was much academic **discussion on** the nature of the doctrine and puzzlement as to its content.

(3) In general, the parties are entitled to **provide for** the exclusion of terms which would otherwise be implied.

(4) The plaintiff agreed with X to buy a plot of land from him subject to the **approval by** the plaintiff's solicitor "of title and restrictions".

(5) We confess we cannot see any difference between this condition and the requirement for FIC **approval in** the case under the present appeal.

(10 marks)

Section 4: Single-sentence Construction

Instructions: Construct sentences based on the words given below. Use more than FIVE words in each sentence. You may change the parts of speech of the words (if possible).

1. bind:

2. contrary:

3. provide:

4. contravene:

5. seek:

(20 marks)