The Effects of Data-Driven Learning on EFL Learners' Improvement in Micro Level Skills of Writing

Mehrdad Sepehri*✉ 🆔0000-0002-8357-1444

Department of English, Shahrekord Branch, Islamic Azad University, Shahrekord, Shahrekord, Iran.

Email: m.sepehri@iaushk.ac.ir

ABSTRACT

The general purpose of this study is to investigate the effect of data-driven learning (DDL) on the development of English language learners' writing skills. "Writing skills" in the present study are limited to the formal or structural aspects of language, the way linguistic elements, words, phrases, clauses, and sentences form larger units of language to convey ideas and concepts. The objectives of the study were to compare the learning effects of DDL method with the conventional teaching method's effects on the measures of learners' declarative knowledge of the taught materials, and analytic scoring of their written products. A pre-test and post-test control group research design was used to collect the required data. Two groups of students who participated in the "Paragraph Writing" course were compared in terms of writing skills at the micro level. The control group was trained with the conventional method of using textbooks, teacher's explanations and classroom exercises. The experimental group, in addition to textbooks, received lessons prepared based on concordance lines. Statistical analyzes showed that there is a significant difference between the two groups in terms of declarative knowledge. This result can be interpreted as an indication of superiority of DDL-based courses over conventional textbooks in terms of learners' (declarative knowledge) writing skills development. The results of the analytical scores showed that there is no statistically significant difference between the two groups in terms of "content", "vocabulary" and "organization". However, the DDL group showed more knowledge in "Language Use", which indicates the greater advantage of DDL-based lessons in learning and applying grammar patterns. The practical implications of this research are presented in three separate but related areas of using corpora in language instruction, applying concordancers in language education, and preparing DDL-based materials in language classes. Textbook developers are also recommended specifying certain sections of class activities to DDL-based materials.

*✉ Mehrdad Sepehri is assistant professor of TEFL at Islamic Azad University, Shahrekord Branch. His main areas of interest include using corpora in language teaching, teaching language skills, discourse analysis, and curriculum development.

473

1. Introduction

1.1. Introducing Data-Driven Learning

Data-Driven Learning (DDL) by definition refers to a computer-based approach to foreign language learning. It is an approach to language learning through 'the use of computer-generated concordances to get students to explore the regularities of patterning in the target language, and the development of activities and exercises based on concordance output' (Johns and King 1991: iii). DDL, in this sense, was first developed as a pedagogical implementation of corpora used with international students at the University of Birmingham by the late Professor Tim Johns.

Another frequently used alternative term of DDL is 'classroom concordancing', although a slight distinction can be made between the two terms. Sripicharn (2002) associates the former with the methodological framework and the latter with the practical aspect of the approach, that is, data used in the classroom in the form of concordance citations. In this paper, the term 'DDL' is used to address both the methodological framework and the practical aspects of the approach.

'DDL consists in using the tools and techniques of corpus linguistics for pedagogical purposes' (Gilquin and Granger, 2010: 359). The general term for the tools is 'concordancer', a computer program that can search through an available language database, technically called a corpus, and find a selected word and list sentences or portions of sentences containing that word, called the Key-Word-In Context (KWIC). In this approach, concordances are viewed as starting points to stimulate the learners to enquire, to speculate and to search for rules. The ability to see patterning in the target language and to form generalizations is the key concept of learning the language in question (Hunston and Francis 1999, Hunston 2002). In this case, the concept of induction and inductive learning comes into one's mind. That is, the simple conceptualization of a move from instances of occurrence to get to the underlying rules.

Despite all these promising features of the DDL approach and the associated techniques and activities, many language pedagogy professionals have asked for empirical evidence to support its theoretical bases. During the two recent decades different researchers have tried to pin down the evaluative issues around the approach both qualitatively and quantitatively. In qualitative research the main question deals with the learners' behavioural reaction towards and their experiences with concordancing (how they react to the approach). Quantitative research mainly seeks to establish the effectiveness of DDL in language learning.

Gilquin and Granger (2010) admit that very little is known about the effectiveness of DDL, and it is a recurrent theme in the DDL literature that more empirical studies are needed to validate this approach. Other researchers such as Bernardini (2001: 247), Hadley (2002: 120), Mukherjee (2006: 21), and Boulton (2007: 13) are in the same line as they emphasise that 'the claims about the effectiveness of DDL are more of an act of faith, sometimes relying on subjective observation or informal testing, but usually engaging in pure speculation' (Gilquin and

474

Granger, 2010: 365). Boulton (2007) reviewing some attributed advantages of DDL such as its application in 'syllabus design' and 'materials preparation' in foreign or second language teaching, 'fostering learner autonomy', 'increasing language awareness', 'noticing skills', and 'improving ability to deal with authentic language', asserts that 'although these theoretical arguments may seem convincing, their power is mitigated by the fact that DDL has yet to filter down into mainstream teaching and learning practices' (p 13). He states, '[DDL] may be fine in theory, but what about in everyday practice? Empirical evidence in support of the theory would seem essential' (ibid).

A quick review of the related literature reveals that one strand of empirical research has been conducted to examine the extent to which different formats of DDL might have been effective in the learners' writing skills development. Very few empirical studies have been conducted on the learning effects of soft version of DDL, the version in which concordance-based teaching materials in a hand-out format prepared by the teacher, in a writing course.

1.2 Issues on Teaching Writing in EFL Contexts

As for teaching writing in EFL contexts, learners even at advanced levels have proved to be in need of developing basic sentence-level linguistic features, both grammatical and lexical. Having been teaching English at various TEFL contexts, the present researcher has been aware of cases of teaching and learning problems, insufficient methods, and inappropriate materials used at

475

different levels. Teaching different 'Writing' courses to university students at different levels drew me to the idea that there are a number of skills and sub-skills involving in developing writing skills that must be pursued by the learners in a longitudinal process. In technical terminologies the two concepts of 'micro-level skills' (the issues more focused on in product-oriented instructions) and 'macro-level skills' (the focused subjects in process-oriented classes) cannot be separated when the idea of teaching 'Writing' comes to the mind both theoretically and practically.

By micro-level skills is meant the formal or structural aspects of the language, the way the linguistic elements, words, phrases, clauses, and sentences form larger units of language to transfer the ideas and concepts. According to Brown (2004), using acceptable grammatical systems (e.g., tense, agreement, and pluralisation), patterns, and rules; expressing a particular meaning in different grammatical forms; and using cohesive devices in written discourse are all features of micro-skills of writing. Macro-level-skills, however, focus on a wide variety of issues such as: the use of the rhetorical forms of written discourse; accomplishing the communicative functions of written texts according to form and purpose; distinguishing between literal and implied meanings of writing; and developing and using a battery of writing strategies, such as accurately assessing audience's interpretation, using prewriting devices, writing with fluency in the first drafts, using paraphrases and synonyms, soliciting peer and instructor feedback, and using feedback

for revising and editing (see Brown 2004: 221 for more detailed discussions).

As far as offering 'Writing' courses at university departments is concerned, it seems as if curriculum developers have considered a linear procedure of foreign language writing development for the Iranian EFL learners in which they learn these micro- and macro-skills in a linear fashion term by term. In reality, however, learners' needs analyses and inter-language studies show that mastering the language skills is a recursive process. EFL learners are improving their micro- and macro-skills simultaneously all the time. It is not the case that they are completely competent in grammar when they have passed 'Grammar' courses and do not need grammatical development while taking writing courses. Passing a 'Paragraph Development' course does not mean that they are all perfect paragraph writers, and when they are taking an 'Essay Writing' course it does not mean that no micro-level error (grammatical and lexical) would be expected of them.

These observations are in line with what ESL researchers have concluded regarding the significance of teaching towards the product, by focusing on the micro-skills of writing. Hinkel (2004) summarises the results of a large number of studies showing that learning to write the formal L2 academic prose crucial in NNSs' academic and professional careers requires the development of an advanced linguistic foundation, without which learners simply do not have the range of lexical and grammar skills required in academic writing (Grabe

and Kaplan, 1996; Hinkel, 1999, 2002; Kroll, 1979; Nation, 1990, 2001; Ramies, 1993).

1.3 Research Questions and Significance of the Study

Having all of the above discussions along with my personal views and experiences as well as results obtained from a needs analysis that I conducted on a sample of paragraphs written by Iranian EFL learners in mind, I came up with the idea of conducting the present study on developing the writing skills of a group of EFL learners focusing on grammatical features of their writing ability. More specifically, commonly used structural patterns (target patterns in this study) in certain rhetorical text types were identified as the micro-level linguistic items to be developed during an instructional term. In order to teach these target structural patterns in an introductory writing course, 'Paragraph Development', a Data-Driven Learning method is used because of its potential in language learning in general (Cobb, 1999a and b, and 1997a and b) and revealing grammatical patterns in particular (Gaskell and Cobb, 2004). This study, therefore, was conducted as a contribution to the research on DDL by conducting empirical investigations, with both an experimental group and a control group design, on the soft version of DDL, posing the following questions.

1. Do Iranian EFL learners achieve higher improvements in their declarative knowledge scores after being taught through the DDL approach than those who were taught through a Non-DDL approach?

2. Do Iranian EFL learners achieve higher improvements in their analytic writing scores after being taught through the DDL

approach than those who were taught trough a non-DDL approach?

The present study is significant in ascertaining the importance of working on lexico-grammatical skills of EFL learners involved in introductory stages of writing. EFL learners who have been familiar with linguistic items at sentence level and might have been able to distinguish between grammatical and ungrammatical strings of words, whether phrases, clauses or sentences on the one hand and can comprehend these structures in their reading activities on the other hand are still very likely to find themselves unable to write paragraphs. In this study, a certain number of target structural patterns representing product features of writing have been integrated with composing skills of writing at paragraph level representing process features of writing. Therefore, one significance of the study is to provide a practical framework for teaching paragraph writing which can lead the learners to various other types of writing in different genres. In addition, the present study is significant in expanding insights in using the DDL approach in Iranian EFL contexts.

Review of the Related Literature

2.1 Researching DDL

Quite a good number of research has been conducted on the effectiveness of DDL approach in various aspects of second/foreign language learning. Boulton and Cobb (2017), in a meta-analysis study, summarised findings from experimental and quasi-experimental investigations into the effectiveness of using the tools and techniques of corpus linguistics for second language learning or use. Analysis of 64

separate studies representing 88 unique samples reporting sufficient data indicated that DDL approaches result in large overall effects for both control/experimental group comparisons and for pre/posttest designs. In a concluding remark, however, they concluded that "although DDL research demonstrably improved over the period investigated, further changes in practice and reporting are recommended (Boulton & Cobb, 2017, 1).

Following this recommendation, researchers interested in applying corpus-based techniques and tools in language education conducted their research to pin the point in question. Soruç and Tekin (2017) and Karbalaei and Kord Afshari (2019), for example, investigated the effectiveness of DDL in vocabulary learning, Alanazi (2023) in cognitive involvement focusing on vocabulary learning, Lin (2021), Elmansi et al. (2021), and Mardani (2023) in developing knowledge of grammar, Mohammed et al. (2023) in retention of English prepositions, Almegren (2022), Oveidi et al. (2022, 2024) in collocation learning, and Chen et al. (2019), and Therova and McKay (2023) in writing skills development.

Among the research areas conducted on different aspects of DDL, its effect on EFL learners' writing skills development is a rather less focused one. However, Gaskell and Cobb (2004), Yoon and Hirvela (2004), and O'Sullivan and Chambers (2006) started examining the efficiency of DDL technology in developing second language learners' writing skills. In their study, Gaskell and Cobb (2004) tried to see how well learners can use concordance information to correct

their errors in their writing assignments. To do so, they conducted their research in a lower intermediate-level English writing course which followed a process approach consisting of 10 assignments over a 15-week semester. Assignments were completed in two-week cycles, with a first draft and peer feedback in Week 1, and revision and electronic submission in Week 2. The instructor then gave feedback on each student's assignment, including online concordance links for five typical errors. The students were required to revise the text for final submission, and for each of the concordance-inked errors to submit a form explaining specifically what correction had been made based on what concordance information. Errors were indicated on students' essays on the writing course for the first 4 essays; concordances were prepared for each student for each of the 5 errors and made available online; after this, students were expected to create their own concordances for self-correction. Tracking showed the students did make use of the pre-cast concordances, but were less keen on making their own; these generally resulted in an appropriate revision, even for their concordances. Over one-third of the learners became independent concordance-users and claimed they would continue in the future. Learners may well have integrated specific language points, but error types did not significantly decrease over the course as a result of concordancing; recommendations include longer training and a longer time-scale for such results to be seen. The researchers finally concluded that although concordancing could not be seen as a final

solution to learners' error feedback, it is at least an attempt to pave the way for them 'to work on a database of approaches [and] interfaces…...within a research- and-development perspective' (Ibid: 317).

In a study conducted by O'Sullivan and Chambers (2006) learners first wrote an assigned 600-word text in the L2 with access to traditional resources, and errors were highlighted. They were then trained in corpus use over 9 hours, following which they were allowed 2 hours to use concordances to correct their original texts. A general positive reaction was observed from the learners' side as far as lexico-grammar development is concerned. However, negative reactions were also noted from some students. The results of this study suggest that it is possible to make the learners more active in the development of their writing skills through training, guidance, and giving them suitable consultations in making the best use of appropriate corpus. The researchers believe that this active participation could be enhanced by integrating corpora and concordancing into the word processing environment, as suggested by researchers such as Garton (1994), Levy (1990), Milton (1997), and Therova and McKay (2023). Both Gaskell and Cobb (2004) and O'Sullivan and Chambers (2006) focused their attention on the power of concordancing in learners' error correction. In fact, concordancing in this kind of pedagogical implication might not be used as a teaching device but as an error-seeking device. It means that learners use the device after the time when they have written and made their potential mistakes.

More recently, Chen et al. (2019) focused on how the DDL approach might be introduced into a teacher training program. They described the background, implementation, and results of a DDL-focused teacher training workshop designed to introduce a corpus-assisted academic writing pedagogy to in-service English language educators in Hong Kong. To evaluate the success of the workshop and gain further insights on factors that might lead to instructors accepting or rejecting the approach, they administered a questionnaire to participants after the workshop. Results obtained out of data analysis revealed that participants generally had a positive experience of the training. Factors such as prior knowledge of corpora, prior experience in using corpora, motivation for professional development, and teaching experience, showed significant correlation with teachers' perceptions of the difficulties in using corpus tools and an inclination to integrate data-driven learning in their future teaching.

Therova and McKay (2023) conducted their research on how a DDL approach can be applied to enhance student written production in a multidisciplinary classroom in a 10-week PhD pre-sessional programme at a British University. The participants were six international students who used a do-it-yourself (DIY) corpus in weekly DDL sessions to familiarize themselves with discipline-specific academic writing conventions and applying them in their writing. The effectiveness of this approach was investigated through a 'talk around texts' technique employed in semi-structured interviews with individual students and their

supervisors on programme completion. The findings showed that a DDL approach utilizing a DIY corpus has the potential of enhancing PhD student writing in a multidisciplinary classroom on a pre-sessional programme.

One group of the studies explored whether and to what extent corpus use by learners promotes inductive learning and further learner autonomy. The ultimate conclusion drawn out by the researchers was this that using concordancing does not necessarily promote inductive learning because different learners have different abilities and familiarity with inductive learning strategies. For more detailed information see Creswell (2007), Turnbull and Burston (1998) and Pinshuan and Lin (2019).

Yoon (2011: 313) integrates the results of two studies by Cresswell (2007) and Turnbull and Burston (1998) 'to confirm the popular assumption that concordancing may not be for all students, but rather it is more useful to students who "prefer unstructured, discovery-oriented learning"' (Bloch, 2007, p. 187). Other studies such as Watson Todd (2001), Lee and Swales (2006), Kennedy and Miceli (2001), Tribble (2002), and Yoon (2008) reviewed by Yoon (2011) helped confirming the conclusion that applying concordancing in the classroom does not necessarily foster learners as researchers. It has been concluded that in order to determine the degree of success of corpus-driven DDL in L2 writing, an interaction between appropriate training, students' learning styles, and motivation is a requisite.

Since the pedagogical use of corpora in general and applying concordancing

materials in EFL classrooms, in particular, have not been so popular in Iran, few investigations by the researchers have been conducted in the Iranian EFL contexts to the time. Lack of technological facilities at the educational centres and unfamiliarity of the teachers with corpora and corpus-based materials are the main reasons for the scarcity of this type of research. However, some EFL teachers, especially academic researchers have set out to investigate different aspects of the corpus use in educational contexts as far as its learning effects and learners' attitudes among Iranian EFL learners are concerned. To the best of my knowledge, only the following empirical studies have been conducted in the area.

So far, some researchers in the research context of English language teaching in Iran have designed and conducted their research projects around the use of language corpora in its more general sense and the use of DDL-based methods and concordancing lines in a more specific sense. Among these, we can refer to Kosha and Jafarpour (2006), Zafaranieh and Behrooznia (2011), Noor Mohammadi and Tashakori (2015), Gholaminejad and Anani Sarab (2020), Fakhir Ajabshir (2020), and Oveidi et al. (2021, 2024). Koosha and Jafarpour (2006) found that the use of DDL-based educational materials has an advantage over conventional materials in teaching/learning collocation of prepositions. Zafaranieh and Behrooznia (2011) also showed that teaching collocations through dictionaries based on the global Internet network is more efficient than the traditional method of using word lists with examples of cognates.

Focusing on the learning of phrasal verbs, Nour Mohammadi and Tashakori (2015) concluded that language learners who have a higher proficiency level are in a better position than their lower-level peers in using concordancing lines. More recent studies came to the same conclusions. Language learners who receive educational materials based on DDL and innovative methods of using concordances are better both in terms of acquiring knowledge of receptive and productive vocabulary (Karbalai and Kord Afshari, 2019) and learning collocations. (Oveidi et al., 2022, 2024). Esmailnia et al. (2019) conducting a study on how DDL affects students' ability to use collocations correctly within their paragraph writing proved that DDL had a positive mediating role in decreasing collocational errors in students' writing. The study conducted by Fakher Ajabshir (2020) on the effectiveness of concordances on the development of knowledge of receptive and productive of collocations (verb-adverb type) reached similar results and also showed that the participants in her research showed a positive attitude towards this type of educational materials. In a more recent study, Beikian and Esmailnia (2023) similar to Nour Mohammadi and Tashakori (2015) confirmed the effectiveness of the DDL method in teaching phrasal verbs and helping to reduce errors related to this type of verbs in Iranian learners of English at the intermediate level.

2.2 Assessing Second Language Writing

Since the present study deals with evaluating EFL learners' writing skills improvement in an experiment, and this

480

evaluation would be done through assessing their writing performance using a certain scoring procedure, it seems necessary to give a brief review of the procedure applied in the study. Before reviewing this scoring procedure (scale), however, it is, I think, necessary to take a quick look at the distinctions made between the two types of writing sub-skills: Micro- and Macro skills. This survey will help us have a better understanding of the rationale behind the contents, formats and the scoring procedure chosen for pre- and post-tests in this study.

2.2.1 Micro- and Macro Skills of Writing

The taxonomy of sub-skills of writing is said to assist language teachers both in teaching the skill and assessing it. Brown (2004:221) has summarized these into the following two groups of micro-and macro-skills of writing.

Micro Skills:

1. **Produce graphemes and orthographic patterns of English.**

2. **Produce writing at an efficient rate of speed to suit the purpose.**

3. **Produce an acceptable core of words and use appropriate word order patterns.**

4. **Use acceptable grammatical systems (e.g., tense, agreement, and pluralisation), patterns, and rules.**

5. **Express a particular meaning in different grammatical forms.**

6. **Use cohesive devices in written discourse.**

Macro Skills:

1. **Use the rhetorical forms and conventions of written discourse.**

2. **Appropriately accomplish the communicative functions of written texts according to form and purpose.**

3. **Convey links and connections between events, and communicative such relations as main idea, supporting idea, new information, given information, generalization, and exemplification.**

4. **Distinguish between literal and implied meanings of writing.**

5. **Correctly convey culturally specific references in the context of the written text.**

6. **Develop and use a battery of writing strategies, such as accurately assessing audience's interpretation, using prewriting devices, writing with fluency in the first drafts, using paraphrases and synonyms, soliciting peer and instructor feedback, and using feedback for revising and editing.**

Taking a close look at the above taxonomy of writing sub-skills and that of writing performance, described by Brown (2004), we come to the conclusion that the micro-skills apply more appropriately to imitative and intensive types of writing performance and the macro-skills cover wider areas of writing, such as the form and the communicative purpose of a written text, main idea(s) and supporting ideas, the literal and implied meanings and so on.

2.2.2 Analytic Method of Scoring (Rating Scale)

In assessing written performance tasks like writing tests, the theoretical basis upon which the test is founded is a major factor to consider when the test user is choosing this or that rating scale. This is the theoretical base underlying the test tasks which embodies the test or scale developer's notion of what skills

or abilities are being measured (McNamara, 1996). This is the case that either developing a scale and the scale descriptors for each level or choosing an already developed scale is of critical importance for the validity of the assessment (Weigle, 2002).

Analytic scoring is perhaps the most objective scoring scale in which six major elements of writing are scored. Brown (2004) calls this scale "*analytic assessment*" in order to capture its closer association with classroom language instruction than with formal testing. Depending on the purpose of the assessment, scripts might be rated on such features as content, organisation, cohesion, register, vocabulary, grammar, or mechanics. Analytic scoring scales provide more detailed information about a test taker's performance in different aspects of writing and are for this reason preferred over holistic schemes by many writing specialists (Weigle 2002, Brown 2004). One of the best known and most widely used analytic scales in ESL was created by Jacobs et al. (1981). In this scale scripts are rated on five aspects of writing: content, organisation, vocabulary, language use, and mechanics. The five aspects are differentially weighted to emphasize first content (30 points) and next language use (25 points), with organisation and vocabulary weighted equally (20 points) and mechanics receiving very little emphasis (5 points). Brown (2004) presents an analytical scoring scale developed by Brown and Bailey (1984) in which five major categories and a description of five different levels in each category, ranging from "not college level work" to "excellent" are specified. As it was argued above, few empirical studies have

been conducted on the learning effects of soft version of DDL, the version in which concordance-based teaching materials are presented in a hand-out format prepared by the teacher. Therefore, the present study was designed to answer the two raised questions.

3. Research Method

3.1 Research Design

A pretest-posttest control group design was employed to collect the required data. In this design, two groups of EFL university students attending their 'Paragraph Development' course were compared as far as their micro-level writing skills are concerned. The Control Group (Non-DDL) received instructions through the conventional method of textbook usage, teacher explanations, and classroom exercises. The Experimental Group (DDL) received a certain number of classroom concordance-based handouts in addition to textbook usage. Both groups were assigned to similar weekly assignments and attended the same pretest and posttest examination sessions, on the second and final term sessions respectively.

3.2 Subjects

Two groups of undergraduate Iranian EFL students taking a 'Paragraph Development' course functioned as participants of the study. Both groups were comprised of male and female learners: 24 in the Non-DDL (control) and 26 in the DDL (experimental) group. All participants were majoring English within the Teaching English as a Foreign Language (TEFL) programme. Most of the participants (90% of the control group and 96% of the experimental group) were the second-year students in a four-year first-degree system.

482

3.3 Materials and Data Collection Procedures

In order to collect the required data for this study a set of DDL units along with pre- and posttest exams were prepared. The sections below first give an account of materials preparation stages and then describe the data collection procedures.

3.3.1 Preparing Teaching Materials

DDL-based materials, henceforth DDL units, can be considered as central to this research project since by definition the researchers' aim is to evaluate the approach via a set of instructional newly developed materials. As it was mentioned above, the focal linguistic issues and elements in second language writing for some researchers has been the micro level elements, i.e., language patterns. This is where one might think of the importance of investing a considerable amount of classroom presentations, time, and activities on micro level skills of writing, that

is, structural and lexical features of the language involved.

Therefore, there was an urgent need to determine the linguistic contents of the DDL units. To do so, a rather widely used textbook titled as '*Paragraph Development: A Guide for Students of English as a second Language*' by Arnaudet and Barret (1990) was critically analyzed. The results of this analysis comprised a list of 18 target linguistic patterns (See Table 1). After that, the 18 target patterns were sought for in the researcher-compiled learner corpus and the ICLE (International Corpus of Learner English) (Granger. et al. 2009). These two corpora were used as corpora resources for retrieving the target patterns in the concordance lines format. This was done through the use of the corpus linguistic software, AntConc (3.2.4.w) developed by Lawrence Anthony (2024).

Table 1 *18 target patterns extracted from the textbook analysis*

No	Pattern	No	Pattern
1	LS*, sentence.	10	Because of CAUSE, EFFECT
2	The LS enumerator V	11	CAUSE cause/ lead to/ result in EFEECT
3	The adj enumerator V	12	EFFECT, resulting from
4	But the adj enumerator VP	13	IDEA 1[degree of similarity] the same NP as IDEA 2
5	The adj enumerator, however, VP	14	IDEA 1[degree of similarity] similar to IDEA 2
6	CAUSE, linking word, EFFECT	15	IDEA 1 V [degree of similarity] like IDEA 2
7	CAUSE so adj/adv that EFFECT	16	NEG SENTENCE, and neither AUX SUBJECT
8	CAUSE such (a) NP that EFFECT	17	HAVE STH in common
9	since CAUSE, EFFECT	18	as ADJ/ADV as

* LS= Listing signal

In order to prepare the DDL based teaching materials suitable for this writing course in the present study, the soft version

of DDL - as described by Leech (1997) and Gabrielatos (2005) - was chosen because of lack of enough computers in the classrooms on the one hand and incapability of a

considerable number of students to work with computers and concordancers on the other hand. Six DDL units (handouts) were prepared to be taught in six weeks along with 3 units prepared by Sripicharn (2002). The handouts were used in the first 15-20 minutes of each session in the DDL group. This stage of materials preparation involved the operationalisation of data-driven learning for which scholars of the field have considered certain criteria. Determining the type(s) and format of presenting concordances as well as required manipulation of concordance lines are of these criteria. Manipulation may involve the selection of a subset of the concordance, often with the aim of reducing the data to manageable quantities (Gilquin and Granger, 2010) or removing the lines that may cause difficulty in the learners' comprehension because of strange vocabulary, or culturally-unfamiliar topic.

Since the main focus of attention in class activities for the DDL group was learning the listed target patterns (Table 1 above), the majority of activities were in the form of *pattern noticing* as introduced by Tribble and Jones (1990: 37-41). In this type of activity students are presented with the concordance lines in which the grammatical features of the key word are in question. The aim is to help the learners to generalize the pattern in which the word is being used. The technique requires the learners to answer a series of simple questions about the concordance lines and get closer to the target pattern while answering each question and finally generalize the target grammar pattern. (See Appendix A for a sample unit of the DDL Units developed for this study.)

According to the principles of the DDL approach no explanation is given to the students at the beginning of the tasks and they are asked from the beginning to look at concordance lines to find out any regularity. They are informed that the lines are not interconnected and that it is not necessary to read the lines completely. In the beginning stages they are helped through raising questions leading to the pattern(s). The aim of the researcher is to train the learners to be independent autonomous learners.

3.3.2 Preparing Pretest and Posttest

Two similar, roughly identical, tests as for pre and post-test were prepared for both groups. In all parts of the tests the language points in question as well as the item format were exactly the same. The differences between the tests were at the wording level to avoid any possible practice effect that might lead students to memorise the items and answer the questions in the post-test. The pre-test was administered in the third session and the post-test in the final session of the term. Each test is composed of six parts.

This test, which was prepared to measure micro-writing skills, is divided into two main sections: 1) declarative knowledge and 2) procedural knowledge. The first section of the exam consists of 5 parts. In part 1, there are 12 four-choice questions. In part 2, the examinees are asked to connect the sentences using the given conjunctions. Part 3 of the test asks the them to paraphrase the sentences and in part 4, they should complete the sentences with their own words. The focus in all these questions is on connecting ideas through logical relationships between sentences. In part 5, the examinees read a

paragraph with 4 deleted words. They are asked to choose the best word from the four given options.

In the sixth part of the test, in order to evaluate the procedural knowledge of the participants, they have been asked to write about one of the proposed topics. For this part, the examinees were divided into two groups with equal numbers and they were asked to write a paragraph of about 150 to 200 words. Group A was given three similar topics to write a comparative paragraph. They were allowed to choose one of three topics: 1) compare two of your teachers, 2) compare public and private universities in Iran, and 3) similarities and differences between yourself and another. Describe your family members. In Group B, participants were asked to choose one of the three proposed topics and write a cause-and-effect paragraph. These topics include: 1) What are the possible reasons for the lack of education of young Iranians in higher education? 2) Write down the effects of one of your teachers on your personality and feelings towards college or your approach to life in general, and 3) Write a paragraph on the results of decreasing population in Iran in the near future. It should be noted that the same type of topic (comparison or cause-and-effect) that each examinee had chosen in the pre-test was suggested to them for the post-test because the researcher's focus was on tracking the progress of the participants in the development of the same type of text after receiving training and doing exercises. (See Appendix B for the table of specifications and an example of the pre and post-tests).

Before I go on explaining the data collection procedure, it is, I think, necessary to give a brief account of the two types of L2 knowledge conceptualisations, i.e. declarative and procedural knowledge. Ellis (1994, p32) defines declarative knowledge as 'knowledge stored as facts'. He states that learning a language, like any other type of skill learning involves the development of procedure that transforms declarative knowledge into a form that makes for easy and efficient performance. He emphasises that it is important to be able to distinguish between learners' implicit and explicit knowledge of an L2. In his research on measuring implicit and explicit knowledge of L2 learners, Ellis considers the distinction made between declarative and procedural knowledge as put by Anderson (1983). Anderson characterizes the language declarative knowledge as 'knowledge that consists of factual information about the L2 that has not yet been integrated or automatized'. Procedural knowledge refers to knowledge that has become proceduralised so that it is available for automatic and unconscious use. In his attempt at measuring implicit and explicit knowledge of a second language, Ellis (2005: 168) concludes that it is possible to develop tests that will provide relatively separate measures of implicit and explicit knowledge. Therefore, what I have tried to test in the first 5 parts of the test was aimed at measuring the participants' declarative knowledge of linguistic units of words, connectors, and phrases frequently used in developing a paragraph. Since three types of paragraphs - enumerative, compare and contrast, and cause and effect- had been

chosen to work on during the term, the linguistic units for testing were chosen accordingly.

3.4 Data Collection Procedures

The data collection procedure took a complete educational semester. The subjects were all Iranian students majoring English as a foreign language. They were taking a 2 credit "Paragraph Development" course as a compulsory course at their third semester of their university attendance. Both groups attended class for 13 sessions including two sessions of pre-test and post-test. The control group was composed of 24 students and the experimental group 26.

4. Results and Data Analysis

The data collected for the study were analysed through some statistical procedures in order to answer the research questions. Table 2 shows a schematic framework of the data collected from each participant. By 'declarative', in this table I mean the first 5 parts of pre and post-test which is aimed at measuring the participants' declarative knowledge regarding the target grammatical points and patterns taught in both DDL and non-DDL groups.

Table 2 *Different types of collected data through pre- and post-test with scoring specifications*

Declarative						Procedural (Analytical scoring)				
Part 1	Part 2	Part 3	Part 4	Part 5	Total	Content	Organisation	Vocabulary	language use	Total
12	8	8	8	4	40	15	10	10	15	50

'Procedural', here, means the actual writing part of the tests in which participants have been asked to write on a relevant topic and show their writing skill in use.

4.1 Quantification of the data

4.1.1 Declarative parts of pre- and post-test

In order to quantify the participants' performances on pre- and post-tests three steps were taken. Firstly, the first 5 parts of the tests, which were intended to measure the participants' declarative knowledge of language elements and rules of use, were scored both objectively and subjectively by the researcher. This was done according to the appointed marks for each question and each part as appeared on the exam papers. Table 3 shows the total scores of both groups obtained from 5 parts of pre- and post-tests.

Table 3 *Summary of the descriptive results of the first five parts of pre- and post-test in the Non-DDL and DDL groups*

Group	Condition	Total (40)	
		M	SD
Non-DDL (N = 24)	Pre-test	18.20	6.95
	Post-test	19.93	6.51
DDL (N = 26)	Pre-test	27.06	5.63

486

	Post-test	28.88	3.48

M = Mean   SD= Standard deviation

4.1.2 Analytic Scoring

As observed in 2.2.2 above, the most objective scoring scale in which six major elements of writing are scored is called *analytic scoring*. One of the best known and most widely used analytic scales in ESL was created by Jacobs et al. (1981). In this scale scripts are rated on five aspects of writing: content, organization, vocabulary, language use, and mechanics. The five aspects are differentially weighted to emphasize, first, content (30 points) and next language use (25 points). Organisation and vocabulary weighted equally (20 points) and mechanics received very little emphasis (5 points). Since this scale was developed for longer essays than 150 to 250- word length paragraphs, in the present research in which students were not expected to produce paragraphs longer than 200 words, and therefore not a wide range of linguistic elements might appear in every single short paragraph, I decided to revise the scale in a way that scores given to each component was reduced to 50% so that total score would be 50 rather than 100 as its original version indicates. Also, the last component i.e. MECHANICS was deleted and its allocated points was given to LANGUAGE USE.   Therefore, different aspects of writing were rated with different weighting:

- •   CONTENT   15 points
- •   ORGANIZATION   10 points
- •   VOCABULARY   10 points
- •   LANGUAGE USE   15 points

Table 4 *Summary of the descriptive results of analytic scoring in the Non-DDL and DDL groups*

Group	Condition	Content 15		Organization 10		Vocabulary 10		Language use 15		Total 50	
		M	SD	M	SD	M	SD	M	SD	M	SD
Non-DDL (N = 24)	Pre-test	7.67	1.76	5.29	1.40	5.63	1.41	8.00	2.32	26.58	5.87
	Post-test	8.75	2.23	6.33	1.40	5.88	1.15	8.63	1.79	29.58	5.87
DDL (N = 26)	Pre-test	9.73	2.13	7.12	2.01	6.69	1.49	10.31	2.35	33.85	6.96
	Post-test	11.12	2.76	7.04	1.37	6.92	1.62	11.27	2.47	36.35	7.86

M = Mean   SD= Standard deviation

See Appendix C for the revised version of Jacobs et al.'s analytic scoring profile. Table 4 illustrates the summary of numerical values for each component of this analytic scoring procedure in the Non-DDL and DDL groups.

4.2 Statistical Procedures

In order to evaluate the students' performances on each part of the pre- and post-tests a certain number of statistical procedures were applied. To do so, the SPSS statistical package was used to analyse the data. Since the two groups of participants were from two different universities, it seemed necessary to compare them on the ground of language proficiency at the beginning of the study (before any kind of intervention). Therefore, two independent samples t-tests were conducted: one on the total scores of the declarative part of the pre-

test and one on the total score of the analytic scoring on the procedural part of the pre-test, i.e. the written paragraphs. A significant difference between groups on both aspects of this comparison showed that the groups have been different at the beginning of the study as far as language proficiency is concerned. Regarding the results of the t-test between the mean scores of declarative part of the pre-test, as shown in table 5, there is a significant difference in declarative scores between Non-DDL (M = 18.20, SD = 6.95) and DDL (M = 27.06, SD = 5.63; t (48) = 4.96, p ≤ 0.005, two tailed). In regard with comparing the participants' writing ability before any kind of treatment, an independent samples t-test between the mean of analytic total scores of Non-DDL (M = 26.58, SD = 5.87) and DDL (M = 33.85, SD = 6.95; t (48) = 48 - 3.97, p ≤ 0.005, two tailed) showed that the difference between groups were significant.

Table 5 *Independent samples t-test for Declarative and Analytic scoring between Non-DDL and DDL groups in pre-test condition*

		Mean	SD	Paired t-test (2-tailed) $df = 48$; P< 0.05
Total declarative pre-test scores (40 points)	Non-DDL (N= 24)	18.21	6.95	$t = -4.96$ $p = 0.000$
	DDL (N= 26)	27.06	5.63	
Total analytic pre-test score (50 points)	Non-DDL (N= 24)	26.58	5.87	$t = -3.97$ $p = .000$
	DDL (N= 26)	33.85	6.95	

Hence, the statistical procedure of ANCOVA was chosen to compare the participants' performances in the pre-test condition with that of the post-test condition. In this way, it would be possible to correct for the initial differences observed between the groups at the pre-test stage. The reason for using ANCOVA came from the idea that it will let us control for the students' pretest ability in analyzing the final test scores. Pallant (2010) mentions that ANCOVA "is also handy when [we] have been unable to randomly assign [our] participants to the different groups, but instead have had to use existing groups (e.g. classes of students)" (p: 298). This is the exact situation in the present study. According to Hatch and Lazaraton (1991) using ANCOVA in such a situation increases the internal and external validity of the study. That is, we can feel more confident that any claims we make about differences in the two groups after the treatment are not due to preexisting differences in the groups. The following three sections present the details of these analyses.

4.2.1 Statistical Procedures for Declarative Parts of Pre- and Post-test

In order to answer the first question raised in the study, "Do Iranian EFL learners achieve higher improvements in their declarative knowledge scores after being taught through the DDL approach than those who were taught through Non-DDL approach?" a one-way between-groups analysis of covariance (one-way ANCOVA) was conducted to compare the effectiveness

of two different instructions designed to improve the participants' declarative knowledge of English. The independent variable was the type of class presentations (Non-DDL, DDL), and the dependent variable consisted of scores on the post-test condition administered after the intervention was completed. Participants' scores on the pre-test administration were used as the covariate in this analysis. /////The comparison of the adjusted scores conducted through the ANCOVA analyses showed that the difference has been still significant at the post-test time (p = .005). Table 6 illustrates the results in detail. Therefore, we can conclude that the DDL group could have improved their declarative knowledge higher than what the non-DDL group could have done. It would mean that the precise answer to the first question is a positive response.

Table 6 *Independent samples t-test and ANCOVA analyses for Declarative scores between Non-DDL and DDL groups*

	Non-DDL (N= 24)		DDL (N = 26)		P1	P2
	Mean	SD	Mean	SD		
Declarative pre	18.21	6.95	27.06	5.63	.000	-
Declarative post	19.94	6.51	28.88	3.48	.000	.005

P1 = Independent samples t-test   P2 = ANCOVA

4.2.2 Statistical Procedures for Analytic Scoring

The second question posed in this study concerns the Iranian EFL learners' paragraph development within the analytic framework as introduced in 2.2.2. The question is: "Do Iranian EFL learners achieve higher improvements in their analytic writing scores after being taught through the DDL approach than those who were taught through Non-DDL approach?" This question could be answered at two levels. At the macro-level the overall gains of the groups on total Analytic scoring should have been compared and at the micro-level the comparison should have been broken down into comparison of the four different features of the Analytic scoring: 'Content', 'Organization', 'Vocabulary', and 'Language use'.

As for the macro-level comparison an independent samples t-test was carried out on total Analytic scores on the post-test. The results showed a significant difference between mean scores (P = .001). The results of the ANCOVA (p = .364), however, after adjusting pre-test scores, show no significant differences between groups. It means that the observed improvements in the total Analytic scores in both groups might not be attributed to any particular method of teaching, whether Non-DDL or DDL. Table 7 shows the results.

Table 7 *Independent samples t-test and ANCOVA analyses for total Analytic scores between Non-DDL and DDL groups*

	Non-DDL (N= 24)		DDL (N = 26)		P1	P2
	Mean	SD	Mean	SD		

	Non-DDL	SD	DDL	SD	P1	P2
Total Analytic pre	26.58	5.87	33.85	6.95	.000	-
Total Analytic post	29.58	5.87	36.35	7.86	.001	.364

P1 = Independent samples t-test   P2 = ANCOVA

As far as micro-level comparison is concerned, the two groups were compared in terms of their scores obtained on different features of the Analytic scoring. To do so, some independent samples t-tests were used. The level of significance was determined to be .0125. This level of significance was determined as a Bonferroni adjusted alpha since 4 t-tests were required in the statistical analyses in this section (.05/4 = .0125). The results showed that the mean scores of 'Content' on the post-test were significantly different between Non-DDL (M=8.75, SD = 2.23) and DDL (M= 11.12, SD= 2.76; t (48) = 3.72, p = .002). However, the comparison of the adjusted scores conducted through the ANCOVA as illustrated in table 8, showed that the difference is not significant at the post-test time (p = .12). Therefore, we can conclude that although both groups have improved the 'Content' feature of their writings after a term-long period either under the Non-DDL instructional context or the DDL context, after controlling the pre-existing differences via ANCOVA; it was revealed that there is no preference of one method over the other. As for the 'Organisation' feature, as we can see in table 8, both independent samples t-test on post-test means (Non-DDL Mean = 6.33, SD = 1.40 and DDL Mean = 7.04, SD = 1.37; t (48)

= 1.80, p = .079) and ANCOVA (p = .78) indicated that no significant differences have been observed in the groups' achievement in the feature in question.

The third analytic scoring feature under investigation was '**Vocabulary**'. The statistical analyses in this case showed similar results with those of the 'Content'. Although independent samples t-test at time one (pre-test) and time two (post-test) show significant differences (p = .012) between Non-DDL and DDL groups, the ANCOVA results, after adjusting pre-test scores, show no significant differences between groups (p = .328). It means that slight observed improvements in the 'Vocabulary' feature in both groups might not be attributed to any particular method of teaching, whether Non-DDL or DDL.

The final feature of analytic scoring which went under scrutiny was the 'Language use'. The independent samples t-test conducted on the mean scores of 'Language use' on the post-test showed that there is a significant difference between Non-DDL (M=8.63, SD = 1.79) and DDL (M= 11.27, SD= 2.47; t (48) = 4.30, p ≤ .005). This significant difference was verified by the results of the ANCOVA (p = .015). Table 8 illustrates the results in detail. Therefore, we can conclude that the DDL participants could have improved their 'Language use' knowledge higher than what the non-DDL group could have done.

Table 8 *Independent samples t-test and ANCOVA analyses for the four features of 'Analytic' scores between Non-DDL and DDL groups*

	Non-DDL (N= 24)	DDL (N= 26)	

Variable	Groups	Mean	SD	Mean	SD	P1	P2
Content	Pre-test	7.67	1.74	9.73	2.13	.001	-
	Post-test	8.78	2.23	11.12	2.76	.002	.12
Organisation	Pre-test	5.29	1.40	7.12	2.01	.001	-
	Post-test	6.33	1.40	7.04	1.37	.079	.783
Vocabulary	Pre-test	5.63	1.41	6.69	1.49	.012	-
	Post-test	5.88	1.15	6.92	1.62	.012	.328
Language use	Pre-test	8.00	2.32	10.31	2.35	.001	-
	Post-test	8.63	1.79	11.27	2.47	.000	.015
P1 = Independent samples t-test (p≤ 0.0125) P2 = ANCOVA							

5.   Discussion and Conclusion
5.1 Discussion

The results as reported in 4.3.1 showed that the DDL group could have improved their declarative knowledge higher than the non-DDL group. If we take a closer look at the results gained from different components of the declarative part of the tests (table 3), we will see some kind of improvement in every part. It means that class instructions, and activities in both groups have led the learners to answer the multiple-choice questions, sentence connection, sentence paraphrasing, sentence completion, and guided paragraph writing test parts better in the post-test than what they had done in the pre-test. Significant difference between the total scores in this part of the test between the two groups indicate that class attendance with the DDL-based materials has had more positive effects on the learners' improvement than a conventional one with the typical textbook.

What can be concluded at this stage is that even if the aim of classroom teachers or English language teaching curriculum designers is to familiarize learners with structural patterns and grammatical features related to some language points, DDL techniques and materials can be used as an alternative teaching method. This finding can be interpreted in line with the conclusion reached by Fakher Ajab Shir (2020) regarding the positive effectiveness of concordances in increasing the knowledge of collocations for teachers and curriculum designers. She also introduces the use of such educational materials in teaching/learning the knowledge of language learners as a part of the effort to use computer technology and especially concordance tools as a complement to traditional tools.

As for the procedural aspect of the participants' language development, their paragraphs written in the pre- and post-test were compared based on the 'Analytic Scoring' scale. The results show that both groups have generally improved the features of this measurement scale. Since no significant difference was observed between the groups' improvements in terms of analytic scores as a whole (compared at the macro-level), it can be concluded that the observed improvements in the total analytic scores in

both groups is specified to none of the two compared teaching methods, although the educational activities have been effective in both groups. The similarity of the outcomes from the two groups of participants in this study is to some extent similar to the results shown in Pinshuan and Lin's (2019) results in which the two approaches of induction and deduction were equally effective in terms of facilitating the learners' vocabulary acquisition and retention.

As far as micro-level comparison is concerned, both groups have been able to improve the 'Content' feature of their paragraphs. The Non-DDL group had a gain in the 'Organisation' feature, whereas the DDL group had a slight regression. One possible reason for such an unexpected loss could be explained in the focus of attention put on developing the grammatical features, micro level, of the written products in this group. In other words, DDL participants were trying to write paragraphs with fewer grammatical errors and this might have caused them to ignore the organization features of their paragraphs. Both groups showed no significant improvements in the 'Vocabulary' feature which is quite understandable since no particular attention was paid to learning vocabulary during the term. As it was shown in 4.3.2 the DDL group could have improved their 'Language use' features significantly higher than the Non-DDL group. In other words, the DDL-based units can be seen to act as supportive instructional materials in developing the components of the 'language use' feature. If this is the case, I can argue that the DDL method, as used in this group, has given the learners an advantage in learning and applying the target grammar patterns whereas, the parallel group - Non-DDL - did not enjoy the situation.

5.2 Implications of the Study

The implications of the study can be examined on the two areas of theory and practice. As far as theoretical implications are concerned, some underlying ideas of DDL have gone under further scrutiny and also the extent to which the study could have contributed to the conceptualisations involved are presented. The practical implications and more objective impacts of using the DDL approach in instructing a writing course - at a 'Paragraph Development' level - as well as in instructional materials preparation are presented below.

5.2.1 Theoretical Implications

5.2.1.1 Authenticity of materials

One of the issues around using the DDL approach has been authenticity of linguistic input with which language learners are involved. This arises from the fact that DDL typically involves exposing learners to large quantities of authentic data so that learners can play an active role in exploring the language and detecting patterns in it. Gilquin and Granger (2010) assert that 'not only do corpora make it possible to expose learners to authentic language, but they can actually present them with a large number of authentic instances of a particular linguistic item' and this 'condensed exposure' (Gabrielatos 2005: 10) can 'contribute to vocabulary expansion or heightened awareness of language patterns' (2010: 359).

As it was explained in the methodology section above, the sources of concordance lines used for materials preparation purposes in this study were two learner corpora, the ICLE corpus, and IrCLE, a mini learner corpus comprising of the Iranian EFL learners' writings. Both corpora are real authentic language products not for teaching purposes but for some kind of real communication between language learners and their teachers, yet in an academic context. Although I knew using a learner corpus for preparing teaching materials has its own disadvantages like scarcity of well-structured relevant lines for any given particular language item, vocabulary or pattern, I decided to choose these two corpora to take the advantages ascertained by previous researchers. It has been said that 'learner corpora can be extremely useful for form-focused instruction (see, e.g., Granger and Tribble 1998; Seidlhofer 2000) because they present students with typical interlanguage features, especially when the data were produced by learners from the same mother tongue background as the students' (Gilquin and Granger, 2010: 361).

5.2.1.2 Discovery Learning

Based on the theoretical foundations of DDL, the stimulating and fun feature of "discovery learning" should be considered the advantage and superiority of this type of learning compared to many other teaching/learning approaches (Gilquin et al. 2010). Some researchers have described learners as travellers (Bernardini 2001: 22), researchers or detectives (Johns 1997: 101). However, due to a number of factors such as the logistics, the teacher's point of view, the

493

learners' level of language proficiency, and the content of DDL two types of DDL activities may be used in an instructional context; teacher-led activities and learner-led activities which stand at two extremes of a cline (Mukherjee 2006: 12; see also Gabrielatos 2005: 11). Gabrielatos makes a distinction between the two in this way:

"At the teacher-centred end, the teacher decides on the aims of the lesson, selects/designs the materials and manages the lesson. At the learner-centred end, the learner decides on all three, with the teacher or computer programme acting as facilitator and guide. Of course, there can be intermediate combinations, particularly when decisions are taken collaboratively between teacher and learners" (Gabrielatos, 2005: 12).

In this research, the teacher-led end of the continuum was taken into account for the DDL-based materials preparation. Perhaps the main reason was the fact that the learners were not familiar with autonomous learning procedures and strategies as required in the learner-led kind of activities. Although Bernardini (2004: 22) believes that the kind of activities in which learners 'brows large and varied text collections in open-ended, exploratory ways' would be called 'discovery learning', I think preparing a learning situation in which learners think, guess, hypothesise and retrieve a rule out of the language they have been exposed to could also be called a kind of 'discovery learning'. This is because even though the teacher is already familiar with the language pattern, collocation of words, lexical expressions...this is the learners who should

discover what his/her teacher had intended them to get to.

In the prepared DDL-based lessons used in the present study, the principles of discovery learning were followed while putting learners in a position to either find a new pattern or remember previously learned patterns. They were not told what pattern(s) they might need to know or use in any particular lesson. They were given just a few lines of the concordance lines in KWIC format or full-sentence citations, asked to answer a few simple questions about the words before or after the key word, and then to summarize their findings by linking the questions and generalize the answers to a pattern. The same basis of generalization and induction has been observed in other similar studies. For example, Fakher Ajab Shir (2020: 372) acknowledges in her final conclusion, " while both the deductive and inductive groups showed similar gains in receptive knowledge of collocations, the inductive approach was found to be more effective in developing productive knowledge". In effect, they have engaged in a "discovery learning" activity, albeit in a controlled manner. I think this activity can be called "**controlled discovery learning**".

5.2.2 Practical Implications

The practical implications of this research can be presented in four separate but related sections: 1) using corpora, 2) applying concordancers, 3) training learners, and 4) preparing DDL-based materials.

5.2.2.1 Using corpora

In order to adopt a DDL methodology one crucial choice is determining the corpus/corpora from which the concordance

lines would be retrieved. Gilquin and Granger (2010: 360) point out that 'any type of corpus may be used in DDL, and indeed, the literature on DDL mentions quite a large range of corpora: written, spoken or multimodal, monolingual or bilingual, general or specialised, native or non-native, tagged or untagged, etc.' However, particular corpora are best suited for certain purposes and based on the learners' proficiency level, the goals of the teaching course and institutional capabilities like financial supports, technical capabilities etc. the most suitable corpus should be chosen as the corpus resource. In addition to learner corpora like the ones used in this research, for an instructional course such as a 'Paragraph Development' course with the goals of improving the learners' micro level skills other types of corpora such as a 'pedagogic corpus', compiled from textbooks, can be used.

5.2.2.2 Applying Concordancers

Another necessary resource to use in a DDL-based class is a tool to exploit the corpus, i.e. concordancing software (ibid). Either the class is planned to be conducted according to the '*soft version*' of DDL or the '*hard-version*' in terms of Gabrielatos's (2005) classification, the instructional institution in which we are working must be equipped with some sort of at least a concordancer. The *soft version* requires only the teacher to have access to, and the skills to use the software. The teacher prints out examples from the corpus and devises the tasks. Learners work with these corpus-derived and corpus-based materials (Bernardini, 2004; Granger & Tribble, 1998;

494

Osbourne, 2000; Tribble, 1997; Tribble & Jones, 1990). In universities and colleges which language departments subscribe to use a large corpus, the teachers can make use of a retrieving tool available with the corpus. For immediate uses, the teachers can use the Micro-concord software, which is more than capable of producing DDL materials with its facilities such as sorting words on the left and right contexts of the key words, or blanking the key words (Sripicharn, 2002).

In cases that language teachers create their own corpora or want to access a corpus that does not have a built-in concordancing programme, it is important to note that many effective concordancing programmes are available. Some concordancing programmes are very affordable, and others are free (Bennet 2010). AntConc (version: 3.2.4w) which is a free downloadable tool was used for this research. Another common corpus tool used for pedagogic purposes is the WordSmith tools.

5.2.2.3 Training learners

If all the requirements of doing a DDL-based class have been fulfilled without necessary trainings for the learners, no benefit of such a class would be expected. For the novice EFL learners who have had no experiences of reading a certain number of unrelated truncated lines, the first step, after materials preparation stage, will be training them how to read the lines. In this regard teachers are expected to provide their students with necessary training for reading concordance lines and make them aware that reading in DDL approach is not a left-to-right linear movement of the eyes but it involves a top-to-bottom vertical one in which they

495

should try to search for what happens around the key word in the middle of the lines, the node. Students would be taught to focus on a word span of 4 to 5 words before and after the key word.

In many class activities, prepared for the DDL group in this research, in which students were supposed to draw some grammatical patterns out of concordance lines, they were asked to answer the questions following a block of concordance lines. The students were informed that it was not necessary to read all the lines in order, and that they should have searched to find a word, a phrase, or even a punctuation mark. Finding answers to a series of consequential questions would lead them to the intended pattern. Perhaps one crucial role of the teacher who is using this approach is training the learners in reading the concordance lines aiming at analysing text corpora and interpreting computer-derived data.

5.2.2.4 Preparing DDL-based materials

As discussed in 2.2 above, since the 'Paragraph Development' course is a 2-credit mandatory course for the EFL learners doing their undergraduate studies at Iranian universities and the syllabus is already prepared and offered by the Ministry of Science, Research and Technology on the one hand and in most cases English Departments present the course through a textbook or two on the other, I decided to prepare the DDL-based units according to one of the textbooks which is widely used in the universities, that is, 'Paragraph Development' by Arnaudet and Barret (1990). Having analysed the textbook, a list

of 18 grammatical patterns was prepared as the main topics for the DDL-based units.

The format of presenting concordance lines is of great importance in materials preparation stage. KWIC citations are suitable for tasks with a focus on the relationship between the key word and its immediate contexts, or on the patterning of the key word [such as lessons on collocation and connotation]. Full-sentence citations are more helpful when learners are asked to look at language features at the clause or sentence levels (Sripicharn, 2002: 76). In the present study that grammar patterns mostly at clause and sentence levels were the main points of instructions, full sentences were used in many cases, and wherever KWIC format was used, longer contexts (words before and after the key word) than usual 4 or 5 words were presented in the blocks of concordance lines.

Although most commonly used classroom concordancing formats have been intended to present the lexical relations like collocations and connotations (at phrasal level) with immediate contexts in order to show language patterning, it is shown in this study that longer language structures at clause or even sentence levels can be also worked out if the appropriate formatting is chosen. The DDL-based units prepared for this study were aimed at teaching a writing course and therefore the contents, formats, and classroom tasks were chosen, designed and prepared accordingly. Needless to say, it is a rather specific use of the method. Other language teachers can prepare their own DDL-based materials in general teaching contexts to draw learners' attention to different language points.

I believe that appropriate materials can be prepared at word and phrase levels and even at clause and discourse levels as I used in this study. Yet as Sripicharn (2002: 391) asserts 'it is not likely that DDL materials are to be used as the main task for the whole lesson because the teacher has to cover the content of each course and administers quizzes or exams based on the course's syllabus. So, it is suggested that DDL materials be used as supplementary exercises to the main textbook used in each course, or can be used as a general grammar and vocabulary exercises as part of a lesson, or in a self-access language centre'.

5.3 Limitations of the Study

There is no doubt that every research has its own limitations and this one is not an exception. One major limitation that I was dealing with at the designing period of the study was sampling of the participants. Since it was impossible to have two groups of students at one individual university at the same term, I had to take the groups from two different universities. However, attempts were made to have two groups of students with as much identical English learning background as possible. Both groups were taking a 'Paragraph Development' course which is offered at the third term of the students doing BA in English. According to the national curriculum offered at all Iranian universities the students should have passed the same English courses before the 'Paragraph Development' course. Therefore, the groups' similar backgrounds convinced me of their comparability.

This research was conducted in a teaching/learning context in which the

researchers' primary function in the class was teaching the course and collecting data for his own research was the secondary function. On the other hand, students were attending a 2-credit mandatory course for which they had to sit on a final exam at the end of the term. Obviously, the course syllabus had to be covered in both groups, and therefore it was impossible to compare the whole DDL units with the whole Non-DDL ones. Instead, a time span of 15 to 20 minutes (on few occasions 30 minutes) at the beginning of each session was allocated for the DDL activities. Perhaps, if more time had given to the DDL units, some considerable changes in results would have obtained. I think if the present study would be intended to be replicated in the future, one consideration should be to compare a DDL class with a Non-DLL class taught in complete sessions.

5.4 Suggestions for Further Study

In this study the soft version of DDL (classroom-concordances handouts) was used to examine the approach in an Iranian EFL writing context. In the future, the spread of computers in educational contexts in the country will make it possible to introduce the hard version of the DDL approach that is, the direct use of corpora and computer concordancers within the classroom. In this way, language learners can directly consult with corpora about their self-raised questions. Hence, it is suggested to other researchers in the future to design research projects to evaluate the hard version of DDL in an Iranian EFL context.

This study has focused on the effects of DDL on developing writing skills of Iranian EFL learners focusing on paragraphs, and

497

further research could be done on longer academic written texts. Courses such as "Essay Writing" can provide the researchers with the required data. There are about 100 million speakers of Persian around the world, mainly in Iran, Afghanistan, and Tajikistan. There is a need for a learner corpus of the Persian native speakers learning English as a contribution for other EFL researchers and applied linguists who are interested in conducting corpus-based studies suitable for the Persian speaking regions. This corpus compilation can be and should be done under the consultations of *The International Corpus of Learner English (ICLE)* experts based at the University of Louvain.

References

Alanazi, Z. (2023). Data-Driven Learning Tasks and Involvement Load Hypothesis. *World Journal of English Language*, 13(2), 1-23. https://ideas.repec.org/a/jfr/wjel11/v13y2023i2p23.html

Almegren, A. (2022). Pragmatic awareness among Saudi EFL learners. *Journal of Language and Linguistic Studies*, 18(Special Issue 1), 266-276. https://www.jlls.org/index.php/jlls/article/view/3447/1007

Anderson, J. (1983). *The Architecture of Cognition. Cambridge.* Mass.: Harvard University Press.

Anthony, L. (2024). AntConc (Version 4.3.0) [Computer Software]. Tokyo, Japan: Waseda University. Available from https://www.laurenceanthony.net/software

Arnaudet, M. L. & Barret, M. E. (1990). *Paragraph Development* (second edition). Prentice Hall Regents. New Jersey.

Ashtiani, P. & Tahriri, A. (2013). The impact of using concordancer on EFL learners' reading comprehension. *International Journal of Research Studies in Educational Technology* 2/1: 45-56. https://www.learntechlib.org/p/49789/

Beikian, A., & Esmailnia, S. (2023). Effectiveness of Data-Driven Learning in Reducing Phrasal Verb-related Errors among Intermediate English as a Foreign Language Learners. *Iranian Journal of English for Academic Purposes*, 12(1), 1-18. https://journalscmu.sinaweb.net/article_169561.html

Bernardini, S. (2001). Spoilt for choice. A learner explores general language corpora. In G. Aston (Ed.), *Learning with Corpora* (pp. 220-249). Houston: Athelstan.

Bernardini, S. (2004). Corpora in the classroom: An overview and some reflections on future developments. In J. McH. Sinclair (ed.). *How to use corpora in language teaching* (pp.15-36). Amsterdam: Benjamins.

Bloch, J. (2007). *Technologies in the second language composition classroom*. Ann Arbor, MI: University of Michigan Press.

Boulton, A. (2007). But where's the proof? The need for empirical evidence for data-driven learning. *BAAL 40: technology, ideology and practice in applied linguistics*. University of Edinburgh, September 2007. https://hal.science/hal-00326704/document

Boulton, A. (2009). Testing the limits of data-driven learning: language proficiency and training.*ReCALL* 21/1: 37-51. https://www.researchgate.net/publication/29598959

Boulton, A., & Cobb, T. (2017). Corpus Use in Language Learning: A Meta-Analysis. *Language Learning*, 67(2), 348-393. https://doi.org/10.1111/lang.12224

Brown, H.D. (2004). *Language assessment: principles and classroom practices.* Longman.

Brown, J.D. & Bailey, K.M. (1984). A categorical instrument for scoring second language writing skills. *Language Learning 34:21-42.* https://doi.org/10.1111/j.1467-1770.1984.tb00350.x

Chen, M., Flowerdew, J., Anthony, L., (2019). Introducing in-service English language teachers to data-driven learning for academic writing, *System.* 10.1016/j.system.2019.102148

Cobb, T. (1999). Breadth and depth of lexical acquisition with hands-on concordancing. *Computer Assisted Language Learning* 12/4: 345-360.

https://doi.org/10.1076/call.12.4.345.5699

Cresswell, A. (2007). Getting to "know" connectors? Evaluating data-driven learning in a writing skills course, In Encarnación Hidalgo, Luis Quereda and Juan Santana (eds.). *Corpora in the Foreign Language Classroom* (pp. 267 - 287). Amsterdam: Rodopi. https://doi.org/10.1163/9789401203906_018

Ellis, R. (1994). *The study of second language acquisition*. Oxford University Press.

Ellis, R. (2005). Measuring implicit and explicit knowledge of a second language: A psychometric study. *SSLA,* 27, 141–172. https://doi.org/10.1017/S0272263105050096

Elmansi, H., Dadour, D., Qoura, D., Hamada, D. (2021). The Impact of Data-driven Learning based Program on Developing Student Teachers' Lexico-grammatical Performance Skills in EFL Writing. *Journal of Research in Curriculum Instruction and Educational Technology*, 7(3), 37-65. DOI: 10.21608/jrciet.2021.181573

Esmailnia, S., Khoshsima, H., Bakhshizadeh, Y. & Hamidi, H. (2019). Using Data Driven Learning to Reduce Collocational Errors of Iranian Intermediate EFL Learners in Paragraph Writing. *International Journal of English Language & Translation Studies*. 7(4). 111-117.http://www.eltsjournal.org/archive/value7%20issue4/12-7-4-19.pdf

Fakher Ajabshir, Zahra (2020). Teaching Second Language Collocations via Concordances: The Case of Deductive and Inductive Approaches. *Journal of Foreign Language Research*, 10 (2), 362-375. https://doi.org/10.22059/jflr.2020.303435.731

Gabrielatos, C. (2005). Corpora and language teaching: Just a fling or wedding bells? *TESL-EJ* [Online journal article] 8(4). Available from http://wwwwriting. berkeley.edu/TESL-EJ/ej32/al.html.

Garton, J. (1994). Integrating writing tools in a word processor. *On-CALL*, 9/3: 22–27.

Gaskell, D. & Cobb, T. (2004). Can learners use concordance feedback for writing errors? *System* 32/3: 301–319. https://www.sciencedirect.com/science/article/abs/pii/S0346251X04000430

Gholaminejad, R., & Anani Sarab, M. R. (2020). A study of the frequency of academic vocabulary in a corpus of academic textbooks of the English Language Teaching. *Journal of Foreign Language Research*, 10(1), 198-215. https://doi.org/10.22059/jflr.2020.289171.682

Gilquin, G. & Granger, S. (2010). How can DDL be used in language teaching? In A. O'Keeffe & M. McCarthy (eds.). *The Routledge Handbook of Corpus Linguistics. London:* Routledge.

Gilquin, G., S. De Cock & S. Granger. (2010). *The Louvain International Database of Spoken*

English Interlanguage. Handbook and CD-ROM. Louvain-la-Neuve: Presses universitaires de Louvain.

Grabe, W., & Kaplan, R. B. (1996). *Theory and practice of writing.* London: Longman.

Granger, S., Dupont, M., Meunier, F., & Paquot, M. (2009). *International Corpus of Learner English.* Centre for English Corpus Linguistics. *University of Louvain.* Belgium. https://uclouvain.be/en/research-institutes/ilc/cecl/icle.html

Granger, S. & Tribble, C. (1998). Learner corpus data in the foreign language classroom: form-focused instruction and data-driven learning. In: Granger, S. (ed.). *Learner English on computer*. London: Longman, 199-209.

Hadley, G. (2002). An Introduction to Data-driven Learning, *RELC Journal* 33/2: 99–124. https://doi.org/10.1177/003368820203300205

Hatch, E. & Lazaraton, A. (1991). *The Research Manual: Design and Statistics for Applied Linguistics*. New York: Newbury House.

Hinkel, E. (1999). Objectivity and credibility in LI and L2 academic writing. In E. Hinkel (ed.). *Culture in second language teaching and learning* (pp. 90-108). Cambridge: Cambridge University Press.

Hinkel, E. (2004). *Teaching academic ESL writing: Practical techniques in vocabulary and grammar.* Mahwah, NJ: Lawrence Erlbaum Associates.

Hunston, S. (2022). *Corpora in Applied Linguistics (2nd edition).* Cambridge: Cambridge University Press.

Hunston, S. & Francis, G. (1999). *Patter grammar: A corpus approach to the lexical grammar of English*. Amsterdam: Benjamins.

Jacobs, H.J. et al. (1981). Testing ESL Composition: A Practical Approach. Newbury House, Rowley, MA.

Johns, T. (1997). Contexts: the background, development and trialling of a concordance-based CALL program. In: A. Wichmann, S. Fligelstone, T. McEnery and G. Knowles (eds.). *Teaching and Language Corpora.* Harlow: Addison Wesley Longman. 100-115.

Johns, T. & P. King (Eds.). (1991). *Classroom Concordancing. English Language Research Journal* 4. https://books.google.com/books/about/Classroom_Concordancing.html?id=AaMSGwAACAAJ

Karbalaei, A., & Kord Afshari, M. (2019). The role of innovative concordancing instruction method in improving Iranian EFL learners' vocabulary. *International Journal of Research in English Education (IJREE),* 4 (3). http://ijreeonline.com/article-1-197-en.html

Kennedy, C., & Miceli, T. (2001). An evaluation of intermediate students' approaches to corpus investigation. *Language Learning & Technology* 5/3: 77–90.

Koosha, M. & Jafarpour, A. (2006). Data-driven learning and teaching collocation of prepositions: the case of Iranian EFL adult learners. *Asian EFL journal quarterly* 8/4: 192-209.https://www.asian-efl-journal.com/December_2006_EBook.pdf

Kroll, B. (1979). A survey of writing needs of foreign and American college freshmen. *ELTJ* 33/2:219-227. https://doi.org/10.1093/elt/XXXIII.3.219

Lee, D., & Swales, J. (2006). A corpus-based EAP course for NNS doctoral students: moving from available specialized corpora to self-compiled corpora. *English for Specific Purposes*

25: 56–75. https://doi.org/10.1016/j.esp.2005.02.010

Leech, G. (1997). Teaching and language corpora: A convergence. In Wichmann, A., et al., (eds.). *Teaching and language corpora* (pp. 1-23). London: Addison Wesley Longman.

Levy, M. (1990). Concordances and their integration into a word-processing environment for language learners. *System* 18/2: 177–188. https://doi.org/10.1016/0346-251X(90)90052-7

Lin, M. H. (2021). Effects of Data-Driven Learning on College Students of Different Grammar Proficiencies: A Preliminary Empirical Assessment in EFL Classes. *Sage Open*, *11*(3). https://doi.org/10.1177/21582440211029936

Mardani, E. (2023*). Effects of Using Concordance-based Activities on Teaching English Grammar to Iran Junior High School Students: PROSPECT Textbook Series in Focus*. (Unpublished MA thesis). Islamic Azad University - Shahrekord Branch.

McNamara, T.F. (1996). *Measuring second language performance*. London and New York: Longman.

Milton, J. (1997). Providing computerized self-access opportunities for the development of writing skills. In P. Benson, and P. Voller (Eds.). *Autonomy and independence in language learning* (pp. 237–248). London: Longman.

Mohammed, A., Mirzapour, F. & Nabifar, N. (2024). Effects of Data-Driven Teaching on Learning and Retention of English Prepositions by Intermediate Kurdish EFL Learners. *Journal of Language and Translation*, 14(2), 207-218. https://doi.org/%20https://doi.org/10.30495/TTLT.2024.1047804

Mukherjee, J. (2006). Corpus Linguistics and Language Pedagogy: The State of the Art – and Beyond, In S. Braun, K. Kohn & J. Mukherjee

(Eds.). *Corpus Technology and Language Pedagogy* (pp. 5-24). Frankfurt am Main: Peter Lang.

Nation, I. S. P. (1990). *Teaching and learning vocabulary*. New York: Newbury House.

Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.

Nour Mohammadi, E., & Tashakori, S. (2015). The effect of concordance-based approach on learning phrasal verbs to Iranian EFL learners. *International Journal of Research Studies in Language Learning*, 4(3), 33-45. DOI: https://doi.org/10.5861/ijrsll.2014.910

Osbourne, J. (2000). What can students learn from a corpus? Building bridges between data and explanation. In L. Burnard and T. McEnery (eds.). *Rethinking language pedagogy from a corpus perspective:* Papers from the third International Conference on Teaching and Language Corpora (pp. 193-205). Hamburg: Peter Lang.

O'Sullivan, I. & Chambers, A. (2006). Learners' writing skills in French: corpus consultation and learner evaluation. *Journal of second language writing* 15 /1: 49-68. https://doi.org/10.1016/j.jslw.2006.01.002

Oveidi, M., Sepehri, M., & Shafiee, S. (2022). Differential Effects of Input/Output Tasks on Learning English Collocations by Iranian EFL Learners Through the Corpus-Based Instruction. *Journal of Modern Research in English Language Studies*, 9(4), 143-168. https://doi.org/10.30479/jmrels.2022.17054.2040

Oveidi, M., Sepehri, M., & Shafiee, S. (2024). Effects of Input Enhancement and Input Flooding on Learning English Collocations by Iranian Undergraduate EFL Students Through Corpus-based Instruction. *Research in English Language Pedagogy,* 12(3), 573-594. https://doi.org/10.30486/RELP.2024.1106140

Pallant, J. (2020). *SPSS survival Manual: A step-by-step guide to data analysis using SPSS* (7th ed). London, Routledge.

Pinshuan, L., Lin, H., (2019). The effect of the inductive and deductive data-driven learning (DDL) on vocabulary acquisition and retention, *System*, 81, 14-25. https://doi.org/10.1016/j.system.2018.12.011

Raimes, A. (1993). Out of the woods: Emerging traditions in the teaching of writing. In S. Silberstein (ed.). *State of the Art: TESOL essays* (pp. 237-260). Alexandria, VA: TESOL.

Scott, M. (2012). WordSmith Tools version 6. Liverpool: Lexical Analysis Software.

Seidlhofer, B. (2000). Operationalizing Intertextuality: Using Learner Corpora for Learning. In L. Burnard & T. McEnery (eds.). *Rethinking Language Pedagogy from a Corpus Perspective*. Frankfurt: Peter Lang, 207–23.

Sepehri, M. (2015). *The effects of data-driven learning on Iranian EFL learners' writing skills development* [Doctoral thesis, University of Birmingham] University of Birmingham. https://etheses.bham.ac.uk/id/eprint/6267/

Soruç, A., & Tekin, B. (2017). Vocabulary learning through data-driven learning in an English as a second language setting. *Educational Sciences: Theory & Practice*, 17, 1811–1832. http://dx.doi.org/10.12738/estp.2017.6.0305

Sripicharn P. (2002). *Evaluating Data-driven Learning: the use of classroom concordancing by Thai learners of English.* Unpublished Ph.D. Thesis. The University of Birmingham.

Therova, D., & McKay, A. (2023). Enhancing student writing with do-it-yourself corpora on a

PhD pre-sessional programme. *Language Teaching Research*. https://doi.org/10.1177/13621688231221350

Tribble, C. (1997). Put a corpus in your classroom: Using a computer in vocabulary development. In T. Boswood (ed.). *New ways of using computers in language teaching* (pp. 266-268). Alexandria, VA: TESOL.

Tribble, C. (2002). Corpora and corpus analysis: new windows on academic writing. In J. Flowerdew (ed.), *Academic discourse* (pp. 131–149). Harlow, UK: Longman.

Tribble, C. & Jones, G. (1990). *Concordances in the classroom*. London: Longman.

Turnbull, J. & Burston, J. (1998). Towards independent concordance work for students: Lessons from a case study. *ERIC Journal* 12/2: 10 - 21.

Watson Todd, R. (2001). Induction from self-selected concordances and self-correction. *System* 29: 91-102. https://doi.org/10.1016/S0346-251X(00)00047-6

Weigle, S. C. (2002). *Assessing writing*. Cambridge: Cambridge University Press.

Yoon, C. (2011). Concordancing in L2 writing class: An overview of research and issues. *Journal of English for Academic Purposes* 10: 130–139. https://doi.org/10.1016/j.jeap.2011.03.003

Yoon, H. (2008). More than a linguistic reference: the influence of corpus technology on L2 academic writing. *Language Learning & Technology*, 12(2), 31–48. http://llt.msu.edu/vol12num2/yoon/

Yoon, H., & Hirvela, A. (2004). ESL student attitudes toward corpus use in L2. *Journal of Second Language Writing* 13/4: 257-283. https://doi.org/10.1016/j.jslw.2004.06.002

Zaferanieh, E. & Behrooznia, S. (2011). On the Impacts of Four Collocation Instructional Methods: Web-Based Concordancing vs. Traditional Method, Explicit vs. Implicit Instruction. *Studies in Literature and Language*, 3/3: 120-126. Available from: URL: http://www.cscanada.net/index.php/sll/article/view/j.sll.1923156320110303.110

Appendix A
A DDL-Based Lesson Prepared for Learning the "so+adj+that+clause" Pattern

****
****
****

Answer the following questions by taking a quick look at the word view lines 1 to 13 in the table. (You need to read the lines completely)

1. **What is the part of speech of the word after 'so'?**
2. **What is the second word after 'so'?**
3. **Underline the complete sentence after so in lines 1, 10, and 12.**
4. **In line 8 the best word for the missing part is………**

502

a. an origin   b. a source   c.   **.I**
a root   d. an aspect

**5. In sentence 11, what is it that the   .II
writer cannot count? Why cannot s/he
count it/them?**

**6. In line 6, why did Shah Jahan   .III
order to build the mausoleum?**

**7. According to the answers given to
questions 5 and 6 above, can you guess
the relationship between the clauses after
and before '_that_'?**

**8. Can you write a general pattern
for the sentences in this concordance?**

**Please show the relationships between the
clauses around** '_so_'.

**9. In the above concordances,
underline the verb in the cause clause.**

.IV

Appendix B
**A Sample Test Prepared for Micro-writing
Skills Measurement**

Table of Specifications for Pre and Post-
Tests

Knowledge type	Part	No. of items	Type/ format	Measurement (objectives of measurement)
Declarative	1	12	Multiple-choice questions	familiarity with the target linguistic elements and patterns in question during the class sessions
	2	4	Sentence connection	familiarity with inter and intra sentential connectors of ideas and clauses
	3	4	Sentence paraphrasing	ability to use substitution words/expressions in sentences of cause and effect
	4	4	Sentence completion	ability to use appropriate words or expressions to fill the blanks connecting contrasting ideas
procedural	5	4	Guided paragraph writing	ability to recognise correct linking adverbials

Minor changes were made between the pre-test and the post-test in such a way that the root of the four-choice questions was changed for the post-test. The general purpose of the different parts of this test was to evaluate the participants' knowledge of the applied rules of the language, familiarity with the elements of the language in general and frequently used patterns and structures, as well as the elements of organization in a paragraph such as words and conjunctions in particular.

Writing I (Paragraph Development)

****

Part 1: Multiple choice questions. (1 mark each)

Directions: Choose the most appropriate word or phrase in each of the following sentences.

1. …………………... I was away on business; I met an old school friend.

   a. While   b. during   c. as well as d. after

2. I cannot check my voicemail message ………... I get home.

   a. since   b. while   c. until d. so

3. There was……………………... that they couldn't see across the hallway.

   a. too smoke   b. very much smoke   c. such smoke   d. so much smoke

4. The young couple decided to get divorced because they ……………………………. common.

   a. were not in   b. had nothing in   c. were not the same   d. had little

5. The government has also commissioned studies on diabetes, high blood pressure, pneumonia…………. diseases to make sure all treatments are worth paying for.

   a. and other   b. as opposed to   c. such as d. due to

6. John F Kennedy's death was ……...……. Abraham Lincoln's in that they both died when they were president.

   a. totally different from   b. rather like

   c. as the same   d. as similar to

7. In some areas, water levels will fall; ……………………., these areas will no longer be able to support industry.

   a. resulting in   b. on the other hand

   c. as a result   d. leading to

8. He had to retire recently ……………. bad health conditions that he was experiencing last year.

   a. because   b. because of   c. such   d. such a

9. The air was fresh and clean………………...the heavy traffic.

a. because of   b. so that   c. in spite of d. although

10. Five officials were dismissed. ……………… four were arrested.

   a. Every   b. Each   c. Other

   d. Another

11. I don't play the piano now, although……………………………

   a. it never interested me

   b. I have been skillful in sports

   c. I used to when I was younger

   d. my family advised me not to do so

12. Although the technical revolution has provided us with means of facilitating our work and, as a whole, making our lives much easier, …………………………………………

   a. it has failed in one aspect which is the most significant one - the human soul.

   b. it has helped human beings improve their understanding of the world.

   c. many people have been able to cope with their living difficulties much easier.

   d. everyone should appreciate the pioneers of these technological developments.

Part 2: Sentence connection: Connect the following sentences in each item. These sentences can be connected with one of the

words or phrases given in the brackets. (write your answers on the lines provided)

Example:

- **Everyone was pushing.**

- **They wanted to get to the front of the queue. (in order to, although, such that)**

   Everyone was pushing in order to get to the front of the queue.

1. I came to live in the country.

I wanted to have trees around me instead of buildings. (So as to, such……. that, in spite of)

_____

_____

2. Criminals are sent to the prisons.

The rest of the population can have a peaceful life (such a, so that, in order to)

_____

_____

3. We were desperately hungry.

We had no time for lunch. (although, so…. that, such a)

_____

_____

4. I quite enjoyed his last book.

The book wasn't very well written. (because of, in spite of, hence)

_____

_____

Part 3: sentence paraphrasing: Rewrite these sentences using words given in the brackets.

1- His voice was so soft that we could hardly hear him. (such)

_____

_____

___

 2- He had suffered such a serious injury that they took him straight to the hospital. (so)

_____

_____

3- The traffic was so heavy that we could not get to the concert on time (too)

_____

_____

505

4- Try to write clearly so as to avoid being misunderstood. (so.......that)

_____

_____

Part 4: sentence completion: Write the missing part of the sentence with your own words.

1. In spite of ……………………….........................…… ……………. his money was still stolen.

2. The disco is close by, and it's………...........……………………. enough to be a nuisance at night.

3. We missed most of the party. We arrived much ..………..............................……………………....

4. He continued the race despite……………….. ....……….......

Part 5: Guided paragraph writing:

   Directions: Read the following paragraph and choose the best given choice to fill in the blanks.

College life

My life changed a lot when I was in college. There were 600 students in my high school and I knew nearly everyone. ___ (1) __, there were thousands of students in my college and I didn't know anyone. I felt very lonely. In high school the classes were half boys and half girls. In college I studied engineering and there weren't many women in the classes. The biggest change in college was the style of class. We had a lot of reading and learning on our own, __(2)____ in high school the teacher told us nearly everything to study for the exams. ____(3)____ college was more

difficult, I enjoyed my life more than my school days-___(4)____ got used to it!

1. a. Since   b. Therefore   c. However   d. Moreover
2. a. whereas   b. meanwhile   c. for instance   d. hence
3. a. Otherwise   b. Even though   c. On the other hand   d. Consequently
4. a. so   b. before   c. then   d. after

_____

_____

Part 6 (Group A): Paragraph writing task

Instructions: Write a paragraph (150 to 200 words) on one of the following topics in which you are comparing

two things, people or situations.

1. Compare two of your teachers
2. Azad versus state universities in Iran
3. Similarities and differences between you and another member of your family.

Part 6 (Group B): Paragraph writing task

Instructions: Write a paragraph (150 to 200 words) on one of the following topics in which you are giving the reasons or the results of something.

1. Possible reasons for Iranian young people to stop higher education
2. The effects a teacher has had on your character, your feelings about school or your approach to life in general
3. The results of decreasing population in Iran in near future (coming years)

Appendix C

Revised version of Jacobs et al.'s (1981) scoring profile

ESL COMPOSITION PROFILE			
STUDENT	DATE	TOPIC	
SCORE	LEVEL	CRITERIA	COMMENTS
CONTENT 15	**15 - 14 EXCELLENT TO VERY GOOD**: knowledgeable /substantive/ thorough development of thesis/ relevant to assigned topic **13 – 11 GOOD TO AVERAGE**: some knowledge of subject/ adequate range/ limited development of thesis/ mostly relevant to topic, but lacks detail **10 - 8 FAIR TO POOR:** limited knowledge of subject/ limited substance/inadequate development of topic **7 - 6 VERY POOR:** does not show knowledge of subject/ non-substantive/ not pertinent/ OR not enough to evaluate		

ORGANIZATION 10	**10 – 9** **EXCELLENT TO VERY GOOD:** fluent expression/ ideas clearly stated/ supported/ succinct/ well-organized/ logical sequencing/ cohesive **8 – 7** **GOOD TO AVERAGE:** somewhat choppy/ loosely organized but main ideas stand out/ limited support/ logical but incomplete sequencing **6 – 5** **FAIR TO POOR:** non-fluent/ ideas confused or disconnected/ lacks logical sequencing and development **4 - 3** **VERY POOR:** does not communicate/ no organization. OR not enough to evaluate
VOCABULARY 10	**10 – 9** **EXCELLENT TO VERY GOOD:** sophisticated range/ effective word/ idiom choice and usage/ word form mastery/ appropriate register **8 – 7** **GOOD TO AVERAGE:** adequate range/ occasional errors of word/ idiom form, choice, usage *but meaning not obscured* **6 – 5** **FAIR TO POOR:** limited range/ frequent errors of word/ idiom form, choice usage/ *meaning confused or obscured* **4 – 3** **VERY POOR:** essentially translation/ little knowledge of English vocabulary, idiom, word form/ OR not enough to evaluate
LANGUAGE USE 15	**15 – 14** **EXCELLENT TO VERY GOOD**: effective complex constructions/ few errors of agreement, tense, number, word order/function, articles, pronouns, prepositions **13 -11** **GOOD TO AVERAGE:** effective but simple constructions/ minor problems in complex constructions/ several errors of agreement, tense, number, word order/function, articles, pronouns, prepositions *but meaning seldom obscured* **10 – 8** **FAIR TO POOR**: major problems in simple/complex constructions/ frequent errors of negation, agreement, number, word order/ function. Articles, pronouns, prepositions and/or fragments, run-ons, deletions/ *meaning confused or obscured* **7 – 5** **VERY POOR:** virtually no mastery of sentence construction rules/ dominated by errors/ does not communicate/ OR not enough to evaluate
TOTAL SCORE	READER COMMENTS