A Corpus-Based Training Program in Teacher Education: The Case of Grammatical Competence in Writing

Prepared by

Osama Mahmoud AbdAllah Aboelnour

Assistant Lecturer of Curriculum and Instruction (TEFL)
Faculty of Education (Cairo) Al-Azhar University

Abdel-Rehim Saad Eldin El-Hilaly

Professor of Curriculum and Instruction (TEFL) - Faculty of Education
(Cairo) Al-Azhar University

Attia Abdul-Kader Al-Tanany

Professor of Curriculum and Instruction (TEFL) - Faculty of Education
(Cairo) Al-Azhar University

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Osama Mahmoud AbdAllah Aboelnour[1], Abdel-Rehim Saad Eldin El-Hilaly, Attia Abdul-Kader Al-Tanany

Department of Curriculum and Instruction (TEFL), Faculty of Education (Cairo) Al-Azhar University, Egypt.

[1]E: Mail: OsamaAboelnoor1668.el@azhar.edu.eg

ABSTRACT:

The current research sought to explore the effect of a corpus-based training program on developing grammatical competence as measured in the writing test among EFL majors at the Faculty of Education, Al-Azhar University. To meet this end, a quasi-experimental method (the pretest-posttest control-group design) was adopted. The research participants totaling 59 students were randomly assigned into two groups, namely an experimental group (30 students) and a control one (29 students). A writing test was developed with a scoring rubric after testing its validity and reliability and a corpus-based program was developed as a treatment material for fulfilling the research purpose. Results of the study revealed that the corpus-based training program led to significant improvement in EFL student teachers' grammatical competence manifested in their writing. The study highly recommended that teacher education programs need to train student teachers on how to use corpus-based or data-driven language teaching in reaction to the needs and interests of the digital and Gen z students who are more knowledgeable than their teachers themselves. The study concluded with a number of recommendations concerning the use of corpus-based program, EFL grammatical competence and writing skills in initial-teacher education programs and teachers' continuous professional development programs.

Keywords: corpus, concordance lines, grammatical competence, phrases, clauses, tenses.

برنامج تدريبي قائم على قواعد البيانات اللغوية في إعداد المعلم: الكفاية النحوية في الكتابة

أسامة محمود عبد الله عبد الله أبو النور[1]، عبد الرحيم سعد الدين الهلالي، عطية عبد القادر الطناني

قسم المناهج وطرق التدريس (اللغة الإنجليزية)، كلية التربية، جامعة الأزهر، مصر.

[1]البريد الإلكتروني: OsamaAboelnoor1668.el@azhar.edu.eg

المستخلص:

استهدفت الدراسة الحالية الكشف عن أثر برنامج قائم على قواعد البيانات اللغوية في تنمية الكفاية النحوية لدى طلاب شعبة اللغة الإنجليزية بكلية التربية، جامعة الأزهر، ولقد اعتمدت الدراسة على المنهج شبه التجريبي (تصميم المجموعة الضابطة ذو الاختبارين القبلي والبعدي)، بلغ عدد طلاب عينة الدراسة 59 طالبًا تم اختيارهم بطريقة عشوائية، ولقد قام الباحث بتقسيم طلاب عينة الدراسة عشوائيًا إلى مجموعتين، إحداهما تجريبية قوامها 30 طالبًا، وأخرى ضابطة قوامها 29 طالبًا، كما تم الاعتماد على اختبار للكتابة ومقياس متدرج للتصحيح بعد التحقق من صدق الاختبار وثباته، قام الباحث بتصميم برنامج تدريبي قائم على قواعد البيانات اللغوية كمادة معالجة تجريبية لتحقيق هدف الدراسة، كشفت نتائج الدراسة أن البرنامج التدريبي القائم على قواعد البيانات اللغوية أدى إلى تحسن كبير في الكفاية اللغوية للطالب المعلم في الكفاية النحوية والتي انعكست في أدائهم الكتابي، وأوصت الدراسة بحتمية تدريب الطالب المعلم على كيفية استخدام وتوظيف قواعد البيانات اللغوية في الاستجابة لحاجات واهتمامات متعلم العصر الرقمي، ذلك الجيل الأكثر دراية ومهارة في التعامل مع معطيات العصر، وقد خُتمت الدراسة بعدد من التوصيات التي ترتبط باستخدام برامج التدريب القائم علي قواعد البيانات اللغوية، والكفاية النحوية ، ومهارات الكتابة في برامج إعداد المعلم والتنمية المهنية المستدامة.

الكلمات المفتاحية: قواعد البيانات اللغوية، خطوط التوافق، الكفاية النحوية، العبارات ، أشباه الجمل ، الأزمنة

Introduction

Over the past decade, there has been a growing interest in corpus-based language instruction and training, concerned with bringing language corpora into the language classroom in order to enhance student learning outcomes (e.g., Benavides, 2015; Campoy, Cubillo, Belles-Fortuno & Gea-Valor, 2010; Chang, 2014; Cotos, 2014; Flowerdew, 2011; Lin, 2015; Okamoto, 2015; and Reppen, 2011). In recent years, corpus linguistics has been viewed as a methodology of learning foreign languages through investigation (Lindquist, 2009), and corpora have widely been considered as one of the most reliable, effective and modern tools in applied linguistics (Chen, 2013; Lin, 2015; O'Keeffe & McCarthy, 2010).

A corpus is a bank of authentic texts collected and stored electronically so that language learners can observe how a linguistic feature is actually used (Reppen, 2010; Tomlinson, 2011). It can provide sufficient information about the relative frequency of grammatical patterns, vocabulary items, phrasal verbs, collocations and idioms. It can also reveal a lexico-grammatical profile, i.e., the relationship between vocabulary and grammar. With this in mind, corpus-based instruction supplies teachers and students with a valuable reference and a reliable learning tool (Phoocharoensil, 2012).

A key tool in a corpus study is concordancing that refers to "using a software application, known as a concordancer, to find all the occurrences of a particular word or phrase" (O'Keeffe, McCarthy & Carter, 2007, p.113). These authentic occurrences are presented in lines, called concordance lines, with the given word or phrase in the centre of each line. In principle, the concordance lines of a given target feature (e.g. a vocabulary item or grammatical structure) provide FL learners with the privilege of observing a wide range and number of authentic examples (Benavides, 2015). Hence, corpus-based instruction or training could help EFL learners enhance their knowledge and use of a given linguistic feature, thereby boosting their abilities to use such a feature in an authentic way (Klimova, 2014).

Corpus-based instruction, the main interest of the present research, is theoretically grounded in constructivism, socio-cognitive theory, and discovery learning. Constructivism entails that learners actively construct their own knowledge through active involvement in the learning process (Carnell, 2006; Boghossian, 2006; Fosnot, 2005). It has been incorporated into classrooms for many years, and it continues to influence instruction. "As a learning theory, constructivism emerged from broader movements in western intellectual thought: the subjective turn and postmodernism" (Boghossian, 2006, p. 714). From the constructivist point of view, learners should constantly be challenged with tasks that refer to skills and knowledge just beyond their current level of mastery. This, in turn, captures learners' motivation and builds on previous successes to enhance learner confidence (Brownstein 2001). Putting responsibility mostly in the hands of the learner, constructivism approaches students' acquisition of knowledge by discovery learning techniques, which are integrated into the instructional practices, thereby retaining and applying learned information more efficiently (Carnell, 2006).

The Social Cognitive Theory (SCT) of Bandura (1977; 1986), a psychological model of behaviour, also framed this research. SCT which stresses that learning occurs in a social context and that much of what is learned is gained through observation, has been applied extensively by those interested in understanding classroom motivation, learning, and achievement (Pajares, 1996; Schunk & Zimmerman, 1994; 1998). The unique feature of SCT is that it emphasizes social influence and external and internal social reinforcement. In other words, SCT not only pays special attention to the unique way in which individuals acquire and maintain behaviour, but it also considers the social environment in which individuals perform the behaviour (Denler, Heidi., Wolters, Christopher, Benzon, Maria, 2014).

Essentially, corpus-based language instruction reflects both SCT and social constructivism through data-driven learning

(DDL) in which students are encouraged to take on the role of researchers or investigators who are confronted with language data with the aim of formulating rules about form and use (Reppen, 2011). In this way, the students observe, speculate and identify/generalize the contextualized linguistic data presented in the format of concordance lines (Johns, Lee, & Wang, 2008) while their teacher serves mostly to coordinate the students' search (Chang, 2014; Johns, 1991). Willis (2011) stated that "This inductive data-driven approach, with its element of 'challenge and discovery', is in itself a valuable educational experience" (p.41). Consequently, DDL approach encapsulates the nature of discovery learning and its principles (Boulton, 2009; Gilquin & Granger, 2010).

Discovery learning is an active approach to learning through which students interact with the environment by exploring and manipulating objects, wrestling with questions, and performing experiments in order to spark the student's prior knowledge and to pursue further questions (Bruner, 1961). It stresses the experiences students must have rather than mere "coverage of topics" within the curriculum. Through prioritizing the process over the end product, thereby, encouraging mastery and application of the intended linguistic features. The discovery processes provide a path in which students can experience the learned knowledge; thus leading to better understanding and use of the target language (Treadwell, 2010).

Discovery learning exercises, centered on DDL-based materials, provide EFL students with the opportunity to observe authentic linguistic features and make their own generalizations based on personal connections that anchor their learning (Gilquin & Granger, 2010). Therefore, discovery learning increases participation, develops learner autonomy (Gavioli, 2009), enhances FL learners' awareness (Schmidt, 1990) and increases their motivation to get involved in discussions (Gavioli & Aston, 2001).

Additionally, DDL activities reflect the noticing hypothesis discussed in language acquisition (Cotos, 2014,

Johns, Lee & Wang, 2008), in which "learners' acquisition of linguistic inputs is more likely to increase when their attention is drawn to salient linguistic features" (Flowerdew, 2012, p. 216). Together, the various advantages of DDL may reinforce one another, leading students' language development and learning attitudes into the virtuous cycle envisaged in contemporary motivation theory (Dornyei, 2001; Dornyei & Ushioda, 2011). Hence, corpus-based instruction may enhance both cognitive and affective student learning outcomes (Lindholm, 2009).

Student learning outcomes (SLOs) describe what students know, what they are able to do, and what they value by the end of their educational experience. They are what students are able to demonstrate in terms of knowledge, skills and attitudes upon completion of a programme. Hence, enhancing SLOs is the ultimate goal of the educational process (Fullan, 2007). Many studies have been conducted to explore student learning experience mainly in terms of cognitive outcomes and/or affective outcomes (e.g. Lee & Bonk, 2016; Sim & Hew, 2010).

Canale and Swain (1980, 1983) shed light on communicative competence with its components as salient cognitive learning outcomes. Hymes (1972) first introduced communicative competence as comprising of sociocultural with grammatical competence. Many models were later designed to portray communicative competence; however, Canale and Swain's model (1980, 1983) continues to be the main and predominant source for all those making use of communicative competence.

Building on Canale and Swain's (1980) model of communicative competence, Canale (1983) added a fourth element to the original model. The revised model now comprises four instead of three competences: grammatical, sociolinguistic, discourse and strategic. Grammatical competence means that the students have the knowledge code: phonology, morphology, and syntax needed to produce and understand well-formed sentences. Sociolinguistic competence, linking the appropriateness of both

meanings and forms, concerns the students' knowledge of the appropriate use of language in different sociolinguistic contexts. Discourse competence indicates that students have the knowledge of how to use correct language forms and meanings to produce appropriate discourse through using cohesion devices and coherence rules. Strategic competence denotes that students have the knowledge of the verbal and non-verbal communication strategies to overcome communication breakdowns (Canale, 1983; Canale & Swain, 1980).

If we consider the concept of "competence" in terms of the educational process, we can say that competence is primarily the result of training. Through the research of such educational material the student acquires a particular competence – specific knowledge, skills – and gains experience (professional quality) and thus demonstrates perseverance, self-reliance and responsibility (personal qualities). In addition, competence in the educational process is the result of integrated learning (the integration of theory and practice, the integration of teaching methods and educational technologies, the integration of academic disciplines). Competence is characterized by the possibility (the ability, willingness) to apply knowledge and skills in real life, showing the best personal qualities (Safina, 2014).

The development of communicative competence gave to the notion of using language to communicate a meaningful message a more important place on the landscape of foreign language education. Hymes's (1972) communicative competence approach was in response to Chomsky's (1965) emphasis on grammatical competence alone to understand first language acquisition. Chomsky (1965) coined the term "competence" as opposed to "performance"; he defined competence as "the speaker-hearer's knowledge of this language" and performance as "the actual use of language in concrete situation" (pp. 3-4).

Since Hymes introduced the concept of communicative competence in the mid-1960s, the term has gained popularity among instructors, researchers, and other people who work in the

field of second-language and foreign-language pedagogy. Since the mid-1970s, language specialists started adopting the term and developed the idea that they should teach second language/foreign language for communication, and eventually contributed to developing communicative language teaching (CLT) (Savignon, & Wang, 2003).

Hymes's emphasized that a theory of language should include not only grammaticality, but also acceptability. The notion of acceptability reintroduced the social dimension that Chomsky had ignored; thus, Hymes's definition of competence incorporates not only knowledge of the language, but also the ability to use it. If the goal of the communicative approach is to assist students in understanding and operating with the meaning expressed by language in a particular context, cultural instruction must be considered as vital element. In the 1980s, the emerging awareness of the relationship between language, sociocultural aspects, and communicative competence became more structured (Mahdi, 2018).

Consequently, communicative competence is used in language learning literature to refer to the various abilities that a language learner needs to possess or learn in order to communicate successfully with native speakers of the target language. However, Canale and Swain (1980) and Canale (1983) formalized a pedagogical framework on the notion of communicative competence. The essential aspects of this theoretical framework are the nature of communication, the distinction between communicative competence and actual communication, and the main components of communicative competence. Canale and Swain (1980) contended that the individual who possesses communicative competence should demonstrate three sub-competences: grammatical competence (morphology, syntax), sociolinguistic competence (sociocultural rules of use and rules of discourse), and strategic competence (verbal and nonverbal strategies to compensate for breakdowns in communication). Canale (1983) added to this classification the

subcategory of discourse competence, which refers to the ability to combine grammatical forms and meanings to achieve a unified spoken or written text (as distinct from the sociolinguistic sub-competence).

Communicative competence concerns the knowledge and the skills people use when interacting with others in actual communication (Canale & Swain, 1980). Knowledge references what one knows about language and other aspects of communicative language use, whereas skill refers to how well one can perform this knowledge in actual communication. Canale (1983, pp. 3–4) summarized the features of communication discussed by Breen and Candlin (1980), Morrow (1977), and Widdowson (1978) as follows: (a) It is a form of social interaction, and is therefore normally acquired and used in social interaction; (b) It involves a high degree of unpredictability and creativity in form and message; (c) It takes place in discourse and sociocultural contexts which provide constraints on appropriate language use and also clues as to correct interpretations of utterances; (d) It is carried out under limiting psychological and other conditions such as memory constraints, fatigue and distractions; (e) It always has a purpose (for example, to establish social relations, to persuade, or to promise); (f) It involves authentic, as opposed to text-contrived language; and (g) It is judged as successful or not on the basis of actual outcomes. Second-language educators have accepted the concept of the nature of communication and use it as a tool to evaluate students' communicative competence (Canale 1983).

Canale and Swain (1980) and Canale (1983) proposed four components of communicative competence: (a) grammatical competence, (b) sociolinguistic competence, (c) discourse competence, and (d) strategic competence. Successful communication requires all these components. The first component of communicative competence is grammatical competence, which refers to one's ability to form and use grammatically correct expressions for communication. This competence concerns basic linguistic rules such as syntactically correct patterns, morphologically appropriate inflections, proper

lexicons, comprehensible phonological system, and recognizable orthography. This competence allows a native speaker of a particular language to immediately recognize whether an utterance or sentence is grammatically acceptable. Because this competence focuses directly on the knowledge and skill required to accurately comprehend and express the literal meaning of utterances, grammatical competence is a significant concern for any second-language/foreign-language program (Canale, 1983).

Communicative competence is the learners' knowledge and skill that are necessary for communication in a speech community. According to Hymes (1972), it should be viewed as "the overall underlying knowledge and ability for language which the speaker-listener possesses" (p. 13). According to Canale and Swain (1980) communicative competence consists of four different components such as grammatical competence, discourse competence, sociolinguistic competence, and strategic competence. The first two components go with linguistic aspects of communication while the last two go with the functional aspect of communication.

Grammatical competence is the knowledge and the ability to use grammar in meaningful contexts. In other words, it is the linguistic ability to use the knowledge of the rules and system of language. Furthermore, grammatical competence is viewed as the building block of developing communicative competence (Mart, 2018). According to Canale and Swain (1980) grammatical competence is the "knowledge of lexical items and rules of morphology, syntax, sentence grammar semantics, and phonology" (p . 29) and a part of communicative competence.

Grammatical competence deals with sentence level grammar, whereas discourse competence deals with grammar of text. Sociolinguistic competence refers to the language rules and functions in sociocultural settings. Strategic competence is either verbal or nonverbal communicative strategy that the user uses to continue communication when the communication breaks down (Fikroni, 2018).

Since communicative competence consists of grammatical competence, sociolinguistic competence, discourse competence, and strategic competence (Canale and Swain, 1980), grammar teaching should not be ignored in EFL classrooms. Similarly, Larsen-Freeman (1997) states that grammatical competency is as important as other competencies in communicative competence; therefore, grammar should not be neglected in ESL/EFL classrooms. Close (1981) claims that "communication can generally be achieved most efficiently by means of a grammatical sentence or by a series of such sentences logically related" (p. 14); moreover, language cannot be used communicatively without grammar since it is an essential source for communicative use of language (Nunan, 1989). Brown (2007) argues that grammar has a significant role in the process of developing communicative competence. Swain and Lapkin (1998) demonstrated that learners were not able to gain accurate language from long-term rich and meaningful input without grammar.

Despite the increasing interest in bringing corpora into the language classroom, there is still a paucity of research on using corpora and concordance lines in the EFL classes. In this connection, this research intended to examine the possible impact of corpus-based instruction on the EFL grammatical competence in writing.

Research Questions

The third-year EFL majors at the Faculty of Education, Al-Azhar University are lacking the adequate grammatical competence enabling them to produce accurate pieces of writing in terms of phrases, clauses and tenses (Abdul Aziz, 2001; Abdulrahman, 2006; Al-Shammari, 2012; Mohammed, 2003). Subsequently, the present research developed a corpus-based program for tackling such a problem.

As such, the present research seeks to answer the following main question: What is the effect of a corpus-based program on grammatical competence in writing among EFL majors at the Faculty of Education, Al-Azhar University?

Research Hypotheses

The present research sought to verify the following hypotheses:

1) There is no statistically significant difference at 0.01 level between the mean scores attained by the experimental group students in the grammatical competence before and after the treatment.

2) There is no statistically significant difference at 0.01 level between the mean score of the post-test attained by the experimental group and the control one in the grammatical competence posttest.

Research Purpose

The main aim of the present research was to investigate the effect of corpus-based program on EFL learners' grammatical competence in writing.

Definition of Terms

Corpus

Corpus is defined as "a bank of authentic texts collected in order to find out how language is actually used" (Tomlinson, 2011, p. 8).

According to Kennedy (1998), corpus is defined as "a principled or structured collection of texts" (p.3).

In the present research, corpus is operationally defined as a bank of authentic texts collected and stored electronically and easily accessed via the following link: https://www.english-corpora.org/bnc/; thereupon, EFL majors can observe how a linguistic feature is actually used.

Concordance Lines

Tomlinson (2011) defined concordance lines as "a list of authentic samples of language use each containing the same key word or phrase". (p. 7)

Baker, Hardie, & McEnery (2006) referred to concordance lines as "a list of all of the occurrences of a particular search term in a corpus, presented within the context in which they occur – usually a few words to the left and right of the search term". (p. 42-43)

Operationally, concordance lines as a term is defined as a list of authentic samples of language use generated by the BNC presented in the form of lines with the given phrase, clause or linguistic structure in the center of each line.

Grammatical Competence

Canale and Swain (1980) defined grammatical competence as the mastery of the linguistic code: grammatical rules, morphological and syntactic rules, vocabulary, etc.

Grammatical competence is also defined as the ability that students must have to understand and express meaning in terms of lexicon, syntactic, semantic, phonetic and pragmatic rules, which allows them to use these grammatical features to express and understand the meaning of utterances (Larsen-Freeman, 2003).

Operationally, grammatical competence is the ability of the EFL majors to express meaning by recognizing and producing well-formed phrases, clauses and linguistic structure in a written context and is assessed via a writing test.

Research Methodology

Research Design

The present research adopted the quasi-experimental method (the use of methods and procedures to make observations in a study that is structured similar to an experiment). As such, the research adopted the Pretest-Posttest control - Groups Design in which a dependent variable is measured in one group of participants before (pretest) and after (posttest) a treatment and that same dependent variable is also measured at pretest and posttest in another equivalent control group that does not receive

the treatment. The table below shows the main procedures of the target design.

Table 1
The quasi experimental design adopted in the research

Group	Pre-test	Treatment	Post-test
Experimental	O1	X_1	O2
Control	O1	X_2	O2

Research Participants

The research participants were 59 third-year EFL department students at the Faculty of Education, Al-Azhar University whose ages ranged from 18 to 20 years old. The participants were assumed to have sufficient background knowledge to best utilize the corpus-based instruction for developing the grammatical competence. They were randomly selected and assigned into two equivalent groups. The researcher put all the students' names in a vessel and shuffled each time before selecting a name. Each time the researcher selected a name, he put it back in the vessel and shuffled again until he selected the total number of the research participants and assigned them into experimental and control group groups.

The Writing Test

To fulfill the purpose of the current research, a writing test was developed by the researcher in order to determine the grammatical competences in writing among the research participants. The writing test aimed mainly at assessing the candidates' grammatical competence in terms of phrases and clauses and tenses in a written context.

The test contains two sections, namely an informal piece of writing (an e-mail) and a formal piece of writing (an article). The first section, which is approximately one third of the test score and consumes 30 minutes, assesses the participants' skills of producing informal writing manifesting the target grammatical

competence in terms of appropriate tenses, phrases and clauses. The candidates are required to produce not less than150 words to fulfill the section requirements. The second section of the test, which stands for approximately two thirds of the test score and consumes 60 minutes, assesses the participants' skills of composing formal writing, common and less common vocabulary, collocations, idioms, tenses, phrases and clauses. The examinees were asked to write 250 words at least to realize the section requirements. The test format was that each examinee works alone and the two tasks are compulsory to be completed by the participants.

In order to assure the validity and appropriateness of the writing test, it was submitted to a jury of seven specialists in the field of curriculum and instruction (TEFL). The jury members were requested to judge the test validity in relation to the clarity of the test instructions, the consistency of the test tasks with the objectives of the test, the sufficiency of the test tasks to measure the participants' mastery of vocabulary, collocations, idioms, tenses, phrases and clauses, the readability of the test to the level of the third-year EFL students, the suitability of the wording of the test for the level of the third-year EFL students, the cultural familiarity of the content of the test to the third-year EFL students, and the suitability of the test items for assessing the target content.

The jury suggested some modifications and their feedback and suggestions were taken into consideration and the proposed modifications were executed in the final form of the test.

Added to that, a scoring rubric consisting of a number of descriptors was developed by the researcher for scoring the students' written product. The rubric consists of five descriptors ranging from unsatisfactory to excellent. The total score of the test was 30 marks; the first section accounts for (12 marks) and the second one accounts for (18 marks).

The reliability of the writing test was estimated via the interrater reliability technique: "the extent to which two or more raters (or observers, coders, examiners) agree" (Lange, 2011, p.

1348). In this connection, ratings given by two different raters can vary as a function of inconsistencies in judging the rating criteria. Accordingly, the correlation between the two different raters of the 38 students' responses to the initial form of the writing test was used to uncover the inter-rater reliability. The Pearson Correlation Coefficient (2-tailed) was 0.78 which is significant at the 0.01 level indicating that the test was highly reliable and ready in order to be administered in the final experimentation.

Moreover, test-retest reliability was also used to assess the "stability of the test over time" (Mills & Gay, 2019, p. 183). The test was administered to the same pilot participants after a period of 15 days. The researcher (the first rater of the previous test) corrected the retest papers and used Pearson Correlation between the raw scores of the 38 EFL majors in both tests to calculate the reliability coefficient. Pearson Correlation yielded 0.81 which is significant at the 0.01 level (2-tailed) indicating that the test was highly reliable over time for testing the EFL majors' grammatical competence in terms of tenses, phrases and clauses.

Treatment Material

The treatment material of the present research incorporated a corpus-based program. The main aim of the program was to enhance the participants' grammatical competence in writing. The program is comprised mainly of three units addressing the three selected grammatical aspects, namely phrases, clauses and tenses. The program addressed the two main registers of writing (formal and informal); hence, the key activities and assignments of the program focused on producing grammatically appropriate e-mails (informal) and articles (formal). The content delivery has made best use of the British National Corpus (BNC) so as to fulfill the research purpose.

Research Procedures:

The writing test, developed by the researcher, was administered to the research groups, namely experimental and control before administering the program to the experimental group. The responses provided by the students were carefully analyzed according to the scoring rubric developed by the research.

Prior to administering the program, the researcher presented the organization of the suggested program units to the experimental group on the video projector and explained them carefully. Each unit of the three started with a writing task to be performed by the students and collectively corrected by the students themselves and the researcher. The sessions lasted for two hours depended on the BNC corpus as a main source of instruction for looking up the target linguistic feature in each session. The researcher gave a one-hour overview about the corpus, its different components and orders as well as illustrating the different occurrences of words. Meanwhile, the researcher played the role of the guide and facilitator supervising the students' interaction process with the corpus and also assigning the role of each student, guiding the students to focus on the topic when necessary and intervening only when the students needed help.

After fulfilling the administration process of the corpus-based instructional program, the post-test was administered to the experimental and the control groups. Responses of the candidates were assessed, statistically analyzed and compared with their own scores of the pre-test. subsequently, the experimental group students' scores were compared to those of the control group for verifying the effect of the treatment.

Results

Testing the First Hypothesis

To test the first hypothesis stating "there is no statistically significant difference at 0.01 level between the mean scores attained by the experimental group in the writing test in terms of

grammatical competence before and after the treatment", a paired sample t-test was employed because of the nature of the hypothesis. Precisely, a comparison was held between the pretest and posttest mean scores of the experimental group to statistically discover the difference in their grammatical competence before and after the treatment. The subsequent table outlines the results of the statistical analysis obtained:

Table 2

Comparison between the mean scores of the grammatical competence in the writing pre-posttest.

N	Test	Means	SD	Df	t-Value
30	Pre-test	6.73	1.33	29	5.70[**]
	Post-test	8.96	1.44		

The data exposed in the previous table outlines the number of research participants (30) followed by the method of treatment (pre-post). Above and beyond, the table shows the calculated means of the students' responses which are (6.73 & 8.96) in the pre-posttest respectively. The table also demonstrates the value of the standard deviation in the pre posttests which was respectively (1.33 & 1.44). The penultimate cell degree is the freedom degree (29) followed by the calculated results of the *t* value (5.70).

The above stated results underscored that there was a statistically significant difference between the mean scores attained by the experimental group in the (pre and posttest) in the grammatical competence as measured by the writing test developed by the current research. The value of *t* was (5.70) which is significant at (0.00 2tailed). More than that, the results attained are visually depicted in the figure (2) below portraying the difference in grammatical competence in terms of means between the pre-posttest of writing.
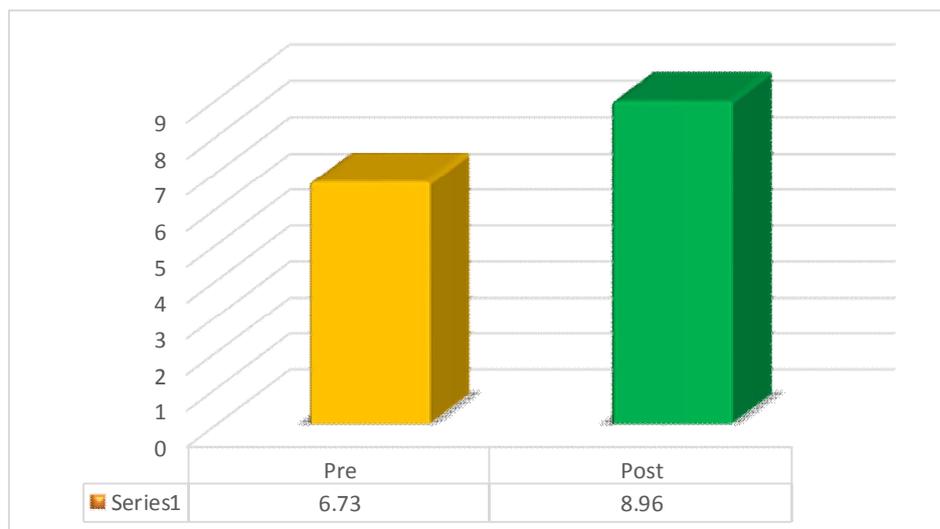
	Pre	Post
Series1	6.73	8.96

Figure (1): *The mean scores of the grammatical competence in the pre-posttest*

The above figure (1) illustrates that there is a clear difference between the mean scores of the experimental group in the pre and post writing tests in terms of the grammatical competence. Consequently, the first null hypothesis was rejected and the alternative one was accepted demonstrating that "there is no statistically significant difference at 0.01 level between the mean scores attained by the experimental group in the grammatical competence before and after the treatment in favor of the post treatment".

Added to that, to validate the results of the statistical analysis, the effect size (how much variance in grammatical competence was a result of the corpus based instruction using concordance lines) was computed using the Cohen's d standard, which resulted in ($d = 1.6$) indicating that 94.5 % of the development in the grammatical competence of the target group could be attributed to the treatment employed (corpus based instruction "concordance lines"). Accordingly, the results attained above manifested the effectiveness of the corpus-based instruction in developing the grammatical competence of the EFL majors at the Faculty of Education, Al-Azhar University.

Testing the Second Hypothesis

To test the second hypothesis signifying that "there is no statistically significant difference at 0.01 level between the mean score of the post-test attained by the experimental group and the control one in the grammatical competence in the post writing test", taking into account the nature of the hypothesis proposed, independent sample *t*-test was utilized. Precisely, a comparison between the post-test mean scores of the experimental group and the control one was held to figure out the changes in the grammatical competence before and after the treatment. The following table (3) displays the results of the statistical analysis.

Table 3

Comparison between the experimental and control groups in terms of grammatical competence mean scores in the writing test.

Group	N	Means	SD	df	T-Value
EX	30	8.96	1.44	57	4.50
Con	29	7.31	1.31		

The above table showed that the number of the research participants in the experimental group was 30 and that of the control was 29 EFL majors at the Faculty of Education Al-Azhar University. Added to that, the mean score of the experimental group was 8.96 and that of the control group was 7.31 with a standard deviation of 1.44 & 1.31 respectively and a freedom degree of (57). The last cell of the table disclosed the value of the *t* (4.5).

As is observed, the above-mentioned results pinpointed that there was a statistically significant difference between the mean scores attained by the experimental group learners and the control group in the post-test in terms of grammatical competence in writing in favor of the experimental group. The *t* value was (4.5) which is statistically significant (sig. = 0.00 2tailed). Furthermore, the data gained was visually presented in the following bar chart (3) portraying the difference in the

grammatical competence mean scores of the research participants in the experimental group and the control one.
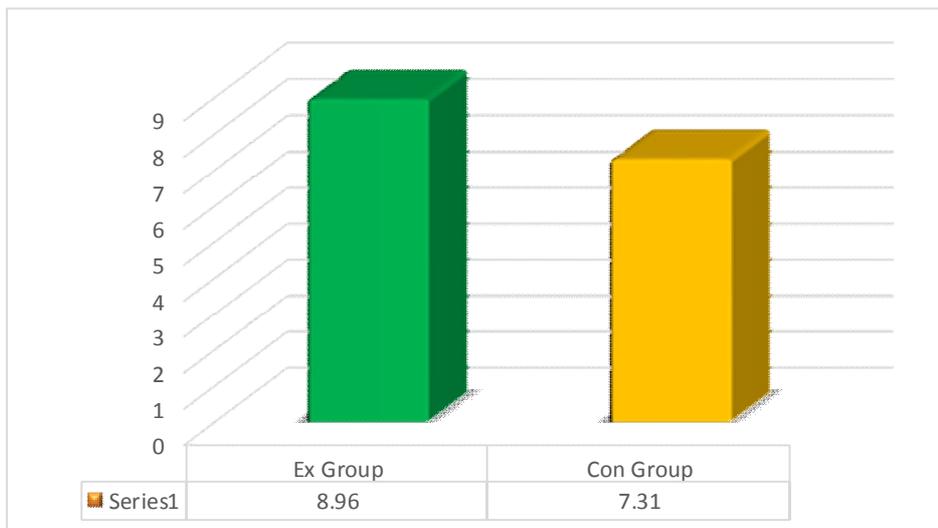

	Ex Group	Con Group
Series1	8.96	7.31

Figure (3): *Comparison between the experimental group and the control one in terms of the grammatical competence*

The provided figure (3) verified that there is an observable difference between the mean scores of the experimental group learners and the control group learners in relation to their grammatical competence as illustrated by their responses to the writing test after studying the treatment materials. Consequently, the third null hypothesis was rejected and the alternative hypothesis was accepted indicating that "there is a statistically significant difference at 0.01 level between the mean score of the post-test attained by the experimental group and the control one in the grammatical competence in the post writing test in favor of the experimental group mean scores".

To authenticate the results of the statistical analysis, showing that there was a statistically significant difference between the mean scores attained by the experimental group learners corpus-based instruction using concordance lines") in their level of grammatical competence after the treatment, the effect size (how much variance in grammatical competence is a result of the corpus-based instruction using concordance lines)

was computed using the Cohen's *d* standard. The results obtained disclosed that *d* value was (1.19) which is high effect size. Furthermore, the results of Cohen's *d* signified that 88 % of the development in the grammatical competence was the result of the treatment employed. Consequently, corpus-based instruction using concordance lines was verified to be a highly feasible mean of developing the EFL majors' grammatical competence among the EFL majors at the Faculty of Education, Al-Azhar University.

Discussion

Corpus-based instruction has been regarded as one of the most effective, accurate, and modern tools in language teaching learning. Above and beyond, the study of corpus "concordance lines" effect has revolutionized in terms of studying language. Corpus has been recently viewed as a feasible means addressed in different studies for verifying its effectiveness in developing different aspects of language.

The current research results revealed that corpus-based instruction using concordance lines has significant effectiveness in developing grammatical competence. The following lines present an interpretation of the results obtained linking such findings to the available related literature.

The results of the present research revealed that corpus-based instruction in the form of concordance lines has significant effect in enhancing the grammatical competence of the EFL majors at the Faculty of Education, Al-Azhar University. The results attained might be attributed to many reasons which provide a plausible interpretation for such results as follows:

Making use of corpus-based instruction using concordance lines in the teaching process is consistent with the inductive approach to developing the students grammatical competence. This approach posits that in grammar teaching, many examples of particular grammar structures are presented in context, from which language learners discover the rules of the structures without being given any explicit guidance. Such use of

the inductive approach allows the participants to meaningfully acquire the usage of the target rule and be able to use such structures and patterns in a meaningful context. Furthermore, the students can transfer what they have learnt in different context verifying the occurrence of the learning.

Another reasonable interpretation for such effectiveness may be attributed to the variety of authentic examples impeded in the corpus which are of different registers containing the rules targeted by the instructors. These examples might help the learners to acquire the target rule and make use of similar examples in different contexts. Furthermore, such examples are not available in other resources such as dictionaries or encyclopedia. Thus, corpus gives the instructor an ideal chance to practice authentic language.

More than that, the adoption of corpus in delivering some grammatical aspects motivates the students to analyze the structure to understand its components. Such analysis helps the students to acquire the grammatical rules incidentally, and they could have easily functionalize such rules in their writing. Another advantage is that the analysis of the structure assists the students to make use of such grammatical rules in different contexts revealing the natural acquisition of language.

Added to that, the usage of corpus-based instruction using concordance lines motivates the students to infer the various grammatical structures, make use of their background knowledge and construct their knowledge of grammar in a constructive way. Opting for meaningful learning might be effective in developing the participants' grammatical competence in particular and their language competence in general.

The preceding interpretation of the results clearly demonstrates that corpus-based instruction using concordance lines was effective in developing the EFL learners' grammatical competence. Such obtained results are in line with many studies (Akyüz, 2018; Girgin, 2011; Huang, 2014; Phoocharoensil, 2012; Vannestål, & Lindquist, 2007; Yilmaz, 2017).

Conclusions

Based on the results attained by the current research, corpus-based instruction is a potential option for developing the study participants' grammatical competence, but language teachers should use it with care. Thus, the marriage between corpus-based instruction and grammar instruction can achieve the intended learning outcomes if competent English teachers are fully prepared and find adequate methods to integrate corpus-based materials into relevant learning contexts. Corpus-based activities are very useful for the students as they first find the part of speech of the word and then deduce the meaning. More than that, the students encounter countless structures which assist greatly in developing their grammatical competence and assist them to acquire the language usage accidentally.

Thereby, corpus can play a facilitative role in enhancing the students' grammatical competence. Pedagogically, the research offers teachers a feasible means to help the students during the very time that they are engaged in independent writing tasks. Language corpus "concordance lines" are very beneficial for language teaching and learning since the students are learnt certain language uses that are not available via any of the traditional tools. Added to that, corpus-based instruction allows students to examine these language features in context. Teachers have an important role in using corpus in order to teach language in the classroom; consequently, they should be properly trained on how to use corpora first. Teachers can serve as facilitators in the preparation of appropriate corpus-informed lessons as well as providing further explanations to students about the target linguistic aspect.

Three important instructional implications can be drawn from the findings of the study.

First, Language corpora are very beneficial for language pedagogy since language corpora help

students learn about certain language uses that are not available in any of the traditional tools.

In addition, corpora allow students to examine these language features in context. Second,

students who like to use dictionaries and grammar books as references still can benefit from

get a broader view of language (i.e., corpora can compare spoken and written languages).

Fourth, teachers have an important role in using corpus in order to teach language in the

classroom. Therefore, teachers should be properly trained on how to use corpora first. Fifth,

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Recommendations and Suggestions for Further Research

Corpus based instruction "concordance lines" holds considerable promise in terms of providing support for teacher's

instruction. Generally, the contribution of corpus technology to writing is recognized in many areas like language description and development of teaching material. Added to that, curriculum designers should rely on corpus rather than their own traditional materials for helping their students in relation to providing authentic contexts of language use.

Based on the research findings, language educators need to be fully aware of the challenges and variables in using corpus for grammatical competence and should take them into consideration when designing and implementing corpus-based curriculum. They need to decide whether and to what extent they want to incorporate corpus-based learning according to their students' learning objectives, language proficiency level, and so on. Learners should strive to lessen their students' difficulties with corpus use by modeling and conducting well-designed training.

Taking into account the research instruments, data collection and the findings obtained, the following suggestions for further studies are provided by the researcher:

- Conducting studies exploring the students' attitudes towards using corpus "concordance lines" in teaching grammar and vocabulary.

- Conducting studies investigating the effectiveness of using corpus in developing different writing aspects (fluency, accuracy, complexity, quality, …)

- There is also a need to investigate whether there is a connection between students' level of English and their capacity to benefit from the corpus "concordance lines".

- There is also a dire need to investigate the effectiveness of corpus "concordance lines" on other lexical features such as: idioms, collocations, chunks, etc.…

- The research results were obtained from immediate post-test, further research is necessary in order to check whether delayed post-test gives the same result or not.

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