International Journal of Research in English Education (IJREE)

Original Article **Published online: 30 June 2024.**

The Comparative Effect of Illustration-Interaction-Induction and Present-Practice-Produce Approaches on the Frequency of Use of Discourse Markers among Iranian EFL Learners in State High Schools

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Received: 24 December 2023
Revision: 6 April 2024
Accepted: 19 May 2024
Published online: 30 June 2024

Abstract

Discourse markers (DMs) play a significant role in both written and spoken language since they function as coherent devices, offering cues and guidance for the understanding of the reader or listener. The frequency of DMs in a language may have a substantial influence on an individual's competency and overall English abilities. With an increased frequency of using these markers, individuals enhance their ability to form cohesive and logical sentences, hence improving their proficiency as speakers or writers. The goal of this study is to compare how the illustration-interaction-induction (III) and present-practice-produce (PPP) approaches affect the frequency of DMs in the expository writing of Iranian high school students. The study involved a sample of 30 intermediate Iranian EFL learners enrolled in state high schools in the city of Kelachay, Guilan, Iran. The research was conducted across three settings, namely pre-test, treatment, and post-test. Participants were asked to write an expository paragraph as part of the pre-test. During the treatment phase, after the instruction of the DMs using the PPP approach, the participants were asked to write a second expository paragraph. Following the implementation of the III approach as the second intervention phase in the study, the subsequent post-test was conducted, wherein participants were asked to compose one additional paragraph. The three sets of paragraphs were compiled into three learner corpora and analyzed to determine the frequency of DMs. The log-likelihood and effect size calculators demonstrated the superiority of the III approach in terms of the frequency of DMs used in the expository paragraphs of Iranian EFL learners in state high schools. The findings provided robust support for the efficacy of the III approach in the context of teaching DMs.

Keywords: discourse markers (DMs), illustration-interaction-induction (III), log-likelihood test, monoconc pro-semester, present-practice-produce (PPP)

1. Introduction

Language can be studied beyond the sentence through discourse. Among the different components studied in discourse, discourse markers (DMs) are crucial in guiding participants' understanding in an ongoing conversation (Lenk, 1998). DMs hold a dialogue together as conversational glue (Louwerse & Mitchell, 2003). As Aijmer (1996, p. 210) stated, "They work as cues or guides to the hearer's interpretation." For English as a foreign language (EFL), making effective use of DMs also helps the conversation flow smoothly in a meaningful and coherent way, which creates a natural-sounding conversation. Among the many features of DMs, we can mention some of their critical features:

- Nearly every language uses DMs (Crible et al., 2019; Khandaghi Khameneh & Fakhraee Faruji, 2020).
- DMs usually initiate discourse and aid the speaker in holding the floor (Müller, 2005).
- DMs operate as pause fillers or delay tactics, which help the speaker contribute to successful communication (Chapetón Castro, 2009).
- DMs possess syntactic adaptability, meaning they have the ability to occur at any point within a statement, including the beginning, middle, or end. The remarkable efficacy and prevalence of DMs are further enhanced by their adaptability (Fujita, 2001).
- The propositional meaning of an utterance remains unaffected by DMs (Brinton, 1996; Schiffrin, 1987).
- DMs have several functions (Fraser, 1990; Schiffrin, 1987).
- DMs have a concise structure, often comprising one to three syllables (Lenk, 1998).

A comprehensive investigation of DMs did not begin until the 1980s. Levinson (1983) was among the first to propose researching DMs. Several researchers, notably Blakemore (1987), Fraser (1990), Schiffrin (1987), and Schourup (1985), provided differing perspectives on DMs, which are delineated in the following sections of the present research.

1.1 Statement of the Problem

DMs are interactional devices usually used to express the speaker's attitude and turn-taking (Brinton, 1996). They are used to deliver the user's intention in a more naturalistic and expressive way (Alsaawi, 2022; Grzech, 2021). The frequency of DMs in the language can significantly impact the proficiency and general English skills of an individual (Khandaghi Khameneh & Fakhraee Faruji, 2020). The more often these markers are used, the better speakers or writers become at constructing coherent and logical sentences (Crible, 2020; Yunis & Haris, 2014). Regarding the overuse, underuse, and wrong use of DMs in EFL learners' writing and speaking, there have been plenty of studies in the literature (e.g., Aysu, 2023). Such deviations from the norm may be due to different reasons, including the effect of the learners' first language (Huang et al., 2023), not receiving appropriate instruction regarding DMs (Yoon & Na-Young, 2022), and so forth. One of the ways this difference can be addressed is through instruction, especially in non-native settings like Iran.

Looking through the research literature with an instructional aim concerning DMs reveals that there are a number of approaches suitable for teaching these critical language items. Among the teaching approaches suitable for instructing DMs are presentation, practice, production (PPP), observe, hypothesize, experiment (OHE), illustration, interaction, induction (III), test, teach, test (TTT), task-based language teaching (TBLT), engage, study, activate (ESA), and authentic use, restricted use, clarification (ARC). Among these, a comparison between the PPP and III approaches is the main focus of the current study since PPP is the most frequently used teaching method in the Iranian state high school system, although calls for a communicative approach like communicative language teaching have been put into the curriculum of the Iranian schooling system (Khazaee & Pourhosein Gilakjani, 2022). Therefore, comparing the PPP approach with the above-mentioned approaches to teaching DMs is important. If the need for change is evident, then it can be recommended.

In the PPP teaching approach, the presentation phase is explicit instruction consisting of selecting and sequencing language features in advance (Long, 1991, 2015). In the practice phase, the language feature is practiced under controlled conditions. In production, activities such as role-plays and discussions encourage the use of the feature in a real-life setting. On the other side, in the III model, learners examine real chunks of language and real data collected from spoken language corpora using illustrations. In the interaction part, learners and teachers analyze the material together and discuss language items they notice through observation and discussion. And in induction (as part of the consciousness-raising stage), learners are encouraged to draw conclusions about the language's features (McCarthy & Carter, 1995).

1.2 Research Questions

The research questions of this study are:

1. Does the III approach contribute to a statistical difference and fix the misuse and/or underuse of DMs in the expository compositions of Iranian EFL learners in state high schools?
2. Does the PPP approach contribute to a statistical difference and fix the misuse and/or underuse of DMs in the expository compositions of Iranian EFL learners in state high schools?
3. Which of these approaches (i.e., III and PPP) will likely result in better performance in terms of the frequency of use of DMs in the expository compositions of Iranian EFL learners in state high schools?

2. Review of the Related Literature

2.1 Introduction

This section discusses DMs-related perspectives, including the speech act theory, the relevance theory, the integrational approach, the functional perspective, a review of DM models with their challenges, the theoretical framework on DMs, and some other related topics.

2.2 Theories of DMs

2.2.1 The Speech Act Theory

The research on DMs initially aimed to describe them as modifiers of speech acts, or "speech act adverbials" (Andersson, 1975). These particles were also considered to be devices that indicate illocutionary force, modifying the intended meaning of a sentence (Foolen, 1996). Accordingly, markers that modify illocutionary force modify Grice's (1975) maxims. They are used when the speaker is aware of violating a maxim. For example, the discourse particle *I think* violates the quality maxim and suggests that the speaker is not fully committing to the truth of their statement (Brown & Levinson 1987, p. 164). Hedging particles are especially interesting because they are an important tool for realizing politeness strategies. *I think*, for instance, can be used as a strategy to avoid threatening the hearer's negative face, such as when giving criticism or advice (Brown & Levinson, 1987). In speech act theory (Grice, 1975), little attention is given to the utterance in its sequential context. However, many discourse particles cannot be understood properly without considering the larger conversation.

2.2.2 The Relevance Theory

Sperber and Wilson's (1986) relevance theory was based on Grice's (1975) beliefs that speakers orient towards principles or maxims in conversation but evolve them further. In either method, the hearer's role is to infer what the speaker indicated based on what was declared and the principles controlling the interaction. Grice claimed that multiple assumptions and statements in natural conversation cannot be comprehended by the rules of standard logic. In order to understand how inferences function in daily conversation, one needs to distinguish between what is said and what is implicated. The listener must infer conversational implicatures based on a set of general maxims (e.g., the cooperative principle). In Sperber and Wilson's (1986) model, hearers are assumed to develop the effect of new information versus existing deductions. Members of the speech community intercommunicate in a cognitive domain and thus have presumptions about what is manifest to each other. The concern for hearers was to specify a context for a declaration, allowing them to make proper inferences about the speaker's meaning. Consider this example from Blakemore (1988, p. 239):

(1) My brother lives in New Zealand.

Blakemore stated

Although you can probably identify the proposal expressed by (1), it is dubious that you will be able to see the point of my declaration given the contextual inference you have in mind at the moment. You have to be capable of correlating this information to assumptions you have already (p. 239).

2.2.3 The Integrational Approach

Schiffrin (1987) presented the idea that DMs are defined in different components of coherence referred to as the ideational structure, action structure (which reflects the series of speech acts that appear within the discourse), exchange structure (which reflects the technicians of the conversational interaction and demonstrates the effect of the participant turn-taking and how these alternations are correlated to each other), information state (which reflects the constant association and administration of knowledge as it grows throughout the discourse), and participant framework (Which reflects how the speakers and hearers can correlate to one another as well as an orientation toward declarations), and that the close interdependence of these components must be taken into account when one studies discourse. DMs have an indexical function and propose contextual coordinates within which a statement is comprehended. Based on Kroon (1995), the major weakness of Schiffrin's (1987) model is that the theoretical notions

(in particular, the five planes of talk) are not adequately described and defined. Some points that have not been given adequate attention in Schiffrin's work are prosody and text type, which are essential hints at the function of discourse particles. Schiffrin's study confines itself to a single text type and a specific group of individuals, failing to consider the distribution of discourse particles across different text types (Aijmer, 2002).

2.2.4 The Functional Perspective on DMs

The functional perspective on DMs focuses on their functional role in discourse and their impact on the coherence and cohesion of spoken and written language. DMs help to maintain cohesion by ensuring that ideas are related and connected. For example, phrases like *therefore*, *as a result*, and *consequently* are used to link sentences or ideas together. DMs help to achieve coherence by signaling the relationships between sentences and providing a context and framework for understanding. For example, phrases like *however*, *in addition*, and *moreover* are used to connect ideas and introduce a contrasting or supplementary point. DMs can also be used to mark information structure, indicating how the information is organized and how it relates to the overall topic or theme. For example, phrases like *firstly*, *secondly*, and *finally* are used to structure information in a logical order. DMs can also convey the speaker's perspective or stance. For example, phrases like *I believe*, *I think*, and *on the other hand* are used to express personal opinions or alternative viewpoints. DMs are also commonly used in writing and editing to help refine the clarity and organization of the text. They can be used to highlight important points, signal transitions between ideas, or clarify complex information.

2.3 Theoretical Framework for DMs

Differentiating between content and pragmatic meaning is central to Fraser's (1990) DMs framework (the theoretical framework for DMs in the present study). According to Fraser, the speaker's motivation for making a particular statement is crucial to its pragmatic meaning. Fraser also stated that DMs have a core meaning, and context negotiates their specific meaning. According to Fraser (1990, pp. 386-387), three kinds of pragmatic markers convey pragmatic meaning:

- "Basic pragmatic markers" (such signals of illocutionary force as *please*)
- "Commentary pragmatic markers" (encoding "an entire message that comments on the basic message," e.g., *frankly*)
- "Parallel pragmatic markers" (encoding "an entire message," but one separate from and in addition to the basic and/or commentary message(s)," e.g., *damn*)

The grammatical-pragmatical paradigm proposed by Fraser (1990) is one of the most influential ways to define DMs. Accordingly, DMs serve as textual coherence and convey the speaker's intention for the next turn in the previous words (Fraser, 1999).

2.4 Language Teaching Models Suitable for Teaching DMs

The PPP model is a hybrid of situational language teaching and behaviorism, with some researchers attributing it to communicative language teaching alone. It begins with the presentation of a new structure in a given context, followed by practice using accurate reproduction techniques. The production phase is more meaning- and communication-oriented, encouraging learners to use the new language and create their own sentences. The PPP model has evolved over the years, with some scholars believing it is still appropriate for language teaching due to its correlation with Anderson's (1983, 1987, 2005) skill acquisition/information processing model, leading learners to notice new language forms and allowing them to develop automatism. However, the model faced criticism in the 1990s for being based on discrete items, promoting accuracy over fluency, not allowing reuse or movement between levels, and not being compatible with a structural curriculum.

Observe, Hypothesize, Experiment (OHE) is another language awareness-based model that incorporates awareness exercises into the teaching process. It emphasizes grammaticalized lexis, where language consists of words, multi-word units, and lexical units that are combined to form sentences, paragraphs, and texts. The hypothesizing and experimenting phases involve activities such as identifying, sorting, and matching, aiming to foster learners' curiosity about language.

III is another language awareness-based model for language teaching. It focuses on access to real data and teaching aspects of spoken grammar. In III, learners examine real data presented in terms of choice of form in relation to context and use. Through observation, learners are challenged to understand and formulate rules for linguistic phenomena. Induction, the final stage, takes awareness one step further by encouraging learners to draw conclusions about the features of the language being analyzed.

Test, Teach, Test (TTT) is an alternative to the PPP model in language teaching. It differs from PPP in that the production phase comes first (the testing phase), followed by the teaching phase, where the teacher can discuss grammatical or lexical problems identified in the activity. The final test is designed to check how well learners have learned the language object. TTT is useful when the teacher is not sure whether learners are familiar with a particular topic and can be especially useful at the intermediate level and beyond when learners have seen the language before but have specific problems with it.

Task-based language teaching (TBLT) developed in the early 1980s as an approach to language teaching within the strong version of CLT. It emphasizes that students must use their communicative skills to learn the language. TBLT usually consists of three phases: the pre-task, the task cycle, and the language focus. In the pre-task phase, the teacher explores the topic with the class, highlights useful lexical items, and presents a recording of a similar or similar task to help them understand what they will do with the task itself. The task cycle can also be divided into three phases: the task phase, the planning phase, the reporting phase, and the language focus, which consists of analysis and practice.

TBLT may not be well suited to cultural contexts, requires teachers to be proficient in L2, reinforces the stereotypical view that English teachers should be native speakers, and is considered impractical in foreign language contexts due to the limited time available for L2 instruction. Task-based instruction is also difficult to implement by non-native teachers whose oral L2 proficiency is uncertain.

Engage, Study, Activate (ESA) is another instructional sequence that stands for Engage, Study, and Activate. It provides more flexible instruction, allowing students to move between levels. Harmer offers three types of lessons created by the different arrangements of engage, study, and activate. Authentic Use, Restricted Use, Clarification (ARC) is a model proposed by Scrivener (1994) that stands for authentic use, restricted use, and clarification. It focuses on form, accuracy, practice, meaning, fluency, enjoyment, and clarifying the meaning, form, and use of a linguistic element. By arranging the A-R-C components in different ways, a wide variety of lessons can be described.

2.5 Previous Experimental Studies DMs

Several researchers have delved into the topic of DMs in recent decades. Fraser (1999) mentioned their contentious and troublesome nature. He made the observation that different scholars have used different terms to study DMs. Fraser claims that scholars have reached a consensus about the fact that DMs serve as lexical expressions connecting segments of discourse, but they have disputed their precise definition and the roles they play. Some of the studies on DMs, both in international and Iranian settings, are listed below.

Chaudron and Richards (1986) studied the impact of various types of DMs on the comprehension of university lectures by international students. They divided DMs into two categories: macro- and micro-markers. In their view, macro-markers serve to indicate the relationship between main segments or to mark the major transition points in discourse, while micro-markers are used to indicate the relations between sentences or to fill pauses. Based on Chaudron and Richards, using macro-markers greatly improves students' ability to understand lectures, but micro-markers do not demonstrate any improvement in this domain.

Flowerdew and Tauroza (1995) replicated the research of Chaudron and Richards (1986). They provided compelling evidence that micro-markers enhance the understanding of second language (L2) oral texts and argued that Chaudron and Richards hastily diminished the significance of micro-markers in relation to comprehension. Flowerdew and Tauroza (1995) posited that the paradoxical results reported by Chaudron and Richards (1986) were primarily attributable to methodological flaws inherent in their study's design. As an illustration, in conducting the research, Chaudron and Richards substituted authentic lecture materials with scripted text. Consequently, the spoken micro-markers appeared artificial and redundant when inserted into the written text. Moreover, to enable their subjects to finish cloze versions of the lecture, the researchers divided the text into units lasting no more than sixty to ninety seconds. The strategically placed pauses at those junctures significantly mitigated the potential for information saturation among the subjects, thereby diminishing the importance attributed to the markers.

The frequency and contextual combination patterns of DMs in interactive spoken question-answering systems were examined by Vasilescu et al. (1998). Their research provided an examination of the role that vocalic hesitations and certain DMs played in a corpus of spoken human utterances. According to their report, the classical DMs appeared to facilitate the initiation of more substantial discursive blocks, both at the beginning and middle points of the ongoing turns. Additionally, the vocalic hesitation indicated that the user was embarrassed and wished to end the conversation.

Anderson et al. (1999) compared the effects of social variables including age, gender, and social class distinctions on young children's use of DMs among 18 monolingual English-speaking American children aged 4–7 from the middle class, the same number of monolingual Chicano children from a working-class community in Southern California,

and middle-class French children from Lyon, France. Even before they entered school, children from all language communities were perceptive to the social connotations conveyed by the use of various DMs. English-speaking children developed a considerable level of proficiency in utilizing diverse DMs to indicate status imbalances in various contexts and roles, as well as to manipulate social situations in which power dynamics are not yet established.

In their study, Heeman and Allen (2000) examined speech repairs, intonational phrases, and DMs. The authors introduced a statistical language model in which the speech recognition problem was reformulated to incorporate intonational phrases, POS markers, DMs, and speech corrections. Macaulay (2002) determined the frequency of the use of *you know* in prolonged samples of speech from a stratified population by utilizing computerized transcription of speech. Two distinct datasets were gathered: a collection of same-sex conversations recorded in Glasgow and an interview set captured in Ayr. The implications proposed by this quantitative study encompassed the variation in the application of *you know* among people who shared similar backgrounds. When conversing with an acquaintance, speakers were more likely to use *you know* than when conducting interviews with strangers. *You know* was more often used by women than men. There was still a long way to go before adolescents incorporated *you know* into their speech patterns. A presumption of common knowledge did not seem to underpin the majority of *you know*'s use.

In their study, Fung and Carter (2007) compared the DM production of native and non-native English speakers using a pedagogic sub-corpus from CANCODE, a corpus of spoken British English, and a corpus of interactive classroom discourse of secondary students in Hong Kong. The findings showed that DMs were effective interactional strategies for organizing and structuring speech on cognitive, interpersonal, referential, and structural levels in both groups. The research also delved into the educational implications of teaching students to be more interactionally competent speakers, since native speakers were shown to use DMs for a broader range of pragmatic activities.

Jung (2008) conducted research on DMs in cross-cultural discourse. The results demonstrated that L2 learners need not only the DMs but also the competence to effectively use such tools in social contexts. Akande (2009) examined DMs in the impromptu speeches delivered by Nigerian university graduates. The analysis of a 30-hour recorded interview provided evidence that DMs used in the spontaneous speech of Nigerian university graduates serve many socio-pragmatic purposes, including repair, explanation, and gap filling. Regional diversity in the usage of DMs has been observed between the Southwest (or Southeast) and the North. Furthermore, this research showed that among the six DMs under investigation, the occurrence of *uh* is the highest, while *I mean* is the lowest.

Concerning the studies performed on DMs in the Iranian setting, a number of studies had a comparative theme (e.g., Tadayyon & Vasheghani Farahani, 2017, among others). Other studies are descriptive in nature, trying to demonstrate the use of DMs in different spoken and written genres (e.g., Taheri Ghaleno & Dabirmoghaddam, 2019). A third group of studies, however, had an instructional tone focusing on the explicit teaching of DMs (e.g., Fahim et al., 2012; Khazaee & Marzban, 2009). However, concerning the theme of the present study, that is, the comparison of the III and PPP approaches concerning DMs, the search in the Iranian literature for research resulted in nothing. However, in a similar line of thinking on an international level, Jones and Carter (2014) investigated the effectiveness of III and PPP used to teach the same spoken DMs to two different groups of Chinese learners and compared them to a control group. Univariate analysis of the pre- and post-tests revealed statistically significant disparities between the PPP group and the III/control groups in relation to a greater average use of the target DMs in the immediate post-test. The qualitative findings indicated that the PPP group typically saw this strategy as more advantageous, which aligned with their superior achievements in the exams. Both groups expressed a preference for using a distinct kind of instructional method in the classroom, centered on practicing real-world activities. This indicates a need to rethink and redefine the way we approach practice within the context of III, PPP, or other instructional frameworks.

3. Methodology

3.1 The Design of the Study

We used a quasi-experimental, within-subjects design or a within-groups design in this study. A within-subjects design, in contrast to a between-subjects design, involves each participant experiencing a number of conditions. The objective is to assess variations over a period of time or variations caused by various interventions on the results, which refer to the frequency of using DMs in the written compositions of Iranian EFL learners in public high schools in the present study. Consequently, the study includes administering two different treatments, namely III and PPP, to the same subjects. The treatments are allocated in a random manner, facilitating treatment randomization and enhancing the validity of the study.

3.2 Participants

We recruited 30 Iranian intermediate EFL learners, aged about sixteen, who were selected from two state high schools in the city of Kelachay, Guilan, Iran. The researchers selected the participants from a total of 120 students. A total of 120 individuals engaged in an online version of the EF Standard English Test (EFSET), and, after an assessment of their proficiency, 30 intermediate (B1) level learners were chosen to participate in the study. The aims and objectives of the research were described to these participants, and consent forms were collected from all participants.

3.3 Instrumentation

3.3.1 EFSET

The EFSET, a standardized test, is designed for individuals who are not native English speakers to assess their competency in the English language. The cooperation that led to its creation involved EF Education First, an international language training company, and a team of language evaluation experts, including Ric Luecht, Mari Pearlman, and Lyle Bachman. The 50-minute test was utilized to evaluate the language skills of the participants. Learners who scored 41–50 (B1 or Intermediate) were selected for the investigation. While other tests have their merits, EFSET's combination of accessibility, reliability, and alignment with CEFR standards makes it a compelling choice for learners and professionals alike.

3.3.2 The International Corpus of Learner English (ICLE): The Normative Native Corpus

ICLE is a collection of essays written by individuals who are learning a language. The project was collaboratively undertaken by multiple universities over a span of thirty years, under the guidance of Sylviane Granger from the University of Louvain. Since its first publication in 2002 and subsequent second edition in 2009, the corpus has been widely utilized in academic projects around the globe. The corpus used in this study is a subset of the ICLE corpus, namely comprising expository essays that are equivalent to those used in the current research. This particular subset of the ICLE corpus has a total of 18,000 words.

3.3.3 MonoConc Pro-Semester Version 2.2

MonoConc Pro-Semester version 2.2 (Barlow, 2017) was used for the extraction of DMs in the pre- and post-treatment phases of the current study. MonoConc is a text-searching software designed for concordance analysis. It allows users to search for specific words or phrases within a corpus of text and provides detailed concordance lines showing the context in which those words appear.

3.3.4 UCREL's Log-likelihood and Effect Size Calculators

In order to test the statistical significance of probable differences in the frequency of use of DMs after the treatments, the log-likelihood and effect size calculators on UCREL's home page (https://ucrel.lancs.ac.uk/llwizard.html) were used. Rayson (2019) was the creator of these tools. They give exact results with regard to the statistical analyses required for the current study.

3.4 Procedure

3.4.1 Data Collection Procedure

In the first step, the EFSET was conducted as a proficiency test, and learners who were at the intermediate level were chosen for the next steps of the study. Then the pretest of the study was performed. The pretest asked the learners to write a short, expository paragraph on the topic "Discuss how traveling widely can be beneficial to students," taken from Tham (2013). The paragraphs were compiled into a corpus and saved for later steps of analysis in order to count the frequency of DMs using the software MonoConc Pro-Semester.

Then the first round of treatment, the PPP approach, was performed for three weeks. During this phase, the teacher presented DMs based on three phases of the PPP approach. In the presentation phase, the teacher (the first author) explained the DMs using contextualization and premade contexts. It should be noted that the presented DMs were *and*, *or*, *but*, *so*, *thus*, *hence*, *also*, *moreover*, *furthermore*, *in addition to*, *particularly*, *however*, *although*, *in comparison to*, *accordingly*, *because*, *since*, *therefore*, *as a result*, and *finally*. In the next practice phase, the teacher offered some exercises, such as matching parts of sentences and completing sentences or dialogues in filling the gaps drills. In this manner, students practiced the newly learned language in a controlled way. At last, in the final phase of the PPP approach, the production phase, students were inspired to use the new language more freely. To accomplish this goal, the first post-test of the study was conducted. The first post-test asked the learners to write a second expository paragraph on the topic "Why do people live longer lives now compared to the past?" Discuss (Tham, 2013). After introducing the topic, the teacher explained a bit about the aspects of the topic to help students think broadly about it and to write down their ideas in the best way possible using expository paragraphs. The paragraphs were

compiled into a corpus and saved for later analysis steps to count the frequency of DMs using the software MonoConc Pro-Semester.

The second treatment phase, which was the III approach, was conducted for three weeks. During this phase, the teacher presented DMs based on three phases of the III approach. In the illustration phase, students listened to and read some conversations where DMs were used for educational purposes. The students noticed how DMs were utilized between the speakers and underlined them. It should be noted that in this phase, the presented DMs were *and*, *or*, *but*, *so*, *thus*, *hence*, *also*, *moreover*, *furthermore*, *in addition to*, *particularly*, *however*, *although*, *in comparison to*, *accordingly*, *because*, *since*, *therefore*, *as a result*, and *finally*. In the next phase, the interaction phase, students discussed context features in pairs or group work. This part was considered a feedback part, and some of its features were written on the whiteboard to maintain the critical functions of the DMs. Finally, in the final phase of the III approach, the induction phase, students were encouraged to think about the speakers' choices of DMs, investigating the reasons for choosing the correct DM in each circumstance. After going through all three phases of the III approach, the second post-test of the study was conducted. It asked the learners to write a third expository paragraph on the topic "Discuss the advantages and disadvantages of social media in our world today" (Tham, 2013). The gathered paragraphs were compiled into a corpus and saved for later analysis steps to count the frequency of DMs using the software MonoConc Pro-Semester.

3.4.2 Data Analysis Procedure

DMs were extracted from the corpora by uploading the corpora to MonoConc ProSemester version 2.2 (Barlow, 2017). In the first stage of analysis, raw frequencies of DMs were extracted from corpora using MonoConc ProSemester version 2.2. After this stage, instances of DMs were rechecked manually by the first author to ensure they were performing the role of DMs. As raw frequencies in corpora with different sizes supply incomparable results, the raw frequencies were normalized per 10,000 words. Normalizing per 10,000 words was done manually with the formula (raw frequency x 1,000,000) ÷ the number of words in the corpus. The log-likelihood and effect size calculators on UCREL's home page were used for analyzing the data.

4. Results

4.1 Descriptive Statistics

As stated in the instrumentation section, we used the ICLE corpus, as a rich native corpus, to be the comparative norm corpus of our study. The frequencies of the selected DMs of the present study in the ICLE corpus are shown in Table 1.

Table 1. Frequencies of the DMs in the ICLE Corpus

DMs	Total hits	Hits considered in the role of DMs	Normalized frequencies (in 10,000 words)
and	500	221	121
or	28	16	8
but	74	32	17
so	39	37	20
thus	10	10	5
hence	4	4	2
also	37	29	16
moreover	0	0	0
furthermore	3	3	1
in addition to	0	0	0
particularly	6	6	3
however	41	40	22
although	19	19	10

in comparison to	0	0	0
accordingly	0	0	0
because	22	22	12
since	14	14	7
therefore	16	16	8
as a result	5	5	2
finally	3	3	1

The results of the pre-treatment phase are displayed in Table 2.

Table 2. Pre-treatment phase results

DMs	Total hits	Hits considered in the role of DMs	Normalized frequencies (in 10,000 words)
and	175	87	291
or	20	10	33
but	5	4	13
so	7	7	23
thus	0	0	0
hence	0	0	0
also	9	8	26
moreover	0	0	0
furthermore	0	0	0
in addition to	1	1	3
particularly	0	0	0
however	0	0	0
although	0	0	0
in comparison to	0	0	0
accordingly	0	0	0
because	18	18	60
since	0	0	0
therefore	0	0	0
as a result	0	0	0
finally	0	0	0

The results of the treatment 1 phase (PPP) are displayed in Table 3.

Table 3. Treatment 1 phase results (PPP)

DMs	Total hits	Hits considered in the role of DMs	Normalized frequencies (in 10,000 words)
and	133	71	193
or	23	11	30
but	37	37	100
so	16	12	32
thus	0	0	0
hence	1	1	2
also	14	14	38
moreover	0	0	0
furthermore	0	0	0
in addition to	0	0	0
particularly	1	1	2
however	3	3	8
although	2	2	5
in comparison to	2	2	5
accordingly	2	2	5
because	20	20	54
since	1	1	2
therefore	3	3	8
as a result	4	4	10
finally	3	3	8

The results of the treatment 2 phase results (III) are displayed in Table 4.

Table 4. Treatment 2 phase results (III)

DMs	Total hits	Hits considered in the role of DMs	Normalized frequencies (in 10,000 words)
and	152	91	271
or	17	8	23
but	22	22	65
so	16	15	44
thus	2	2	5
hence	2	2	5
also	26	22	65
moreover	6	6	17
furthermore	5	5	14
in addition to	2	2	5

particularly	6	6	17
however	13	13	38
although	4	4	11
in comparison to	2	2	5
accordingly	7	7	20
because	8	8	23
since	0	0	0
therefore	4	4	11
as a result	3	3	8
finally	4	4	11

4.2 Inferential Statistics

To test the statistical significance of differences in the frequency of use of DMs after the treatments and to find out the efficiency of the applied treatments, the log-likelihood and effect size calculators on UCREL's home page were used. One of the aims of the present study was to compare the results of the corpora compiled from the pre-test, post-test 1 (PPP), and post-test 2 (III) with a standard native corpus (the ICLE Corpus). The log-likelihood and effect size results in Table 5 compare the DM frequency in the ICLE corpus versus the pre-test corpus.

Table 5. Log-likelihood test results of comparing the use of DMs between the ICLE corpus and the pre-test corp

DMs	O1	%1	O2	%2	LL	Bayes
and	121	0.67	291	9.75	-676.79	666.83
or	8	0.04	33	1.11	-91.11	81.15
but	17	0.09	13	0.44	-15.00	5.04
so	20	0.11	23	0.77	-36.70	26.74
thus	5	0.03	0	0.00	+1.52	-8.43
hence	2	0.01	0	0.00	+0.61	-9.35
also	16	0.09	26	0.87	-50.80	40.84
moreover	0	0.00	0	0.00	+ 0.00	-9.96
furthermore	1	0.01	0	0.00	+ 0.30	-9.65
in addition to	0	0.00	3	0.10	-11.74	1.78
particularly	3	0.02	0	0.00	+0.91	-9.04
however	22	0.12	0	0.00	+6.70	-3.25
although	0	0.06	0	0.00	+3.05	-6.91
in comparison to	0	0.00	0	0.00	+0.00	-9.96
accordingly	0	0.00	0	0.00	+0.00	-9.96
because	12	0.07	60	2.01	-173.58	163.62
since	7	0.04	0	0.00	+ 2.13	-7.82
therefore	8	0.04	0	0.00	+ 2.44	-7.52
as a result	2	0.01	0	0.00	+0.61	-9.35
finally	1	0.01	0	0.00	+0.30	-9.65

Note. Based on Rayson (2019), O1 and O2 are the observed frequencies of DMs in the ICLE corpus and the pre-test corpus; %1 and %2 values show relative frequencies in the ICLE corpus and the pre-test corpus. LL indicates the log-likelihood value (G^2); "+" before LL indicates overuse in O1 relative to O2, "-" before LL indicates underuse in O1

relative to O2. Bayes Factor (BIC) indicates effect size: 0-2: not worth more than a bare mention; 2-6: positive evidence against H0; 6-10: strong evidence against H0; > 10: very strong evidence against H0.

In Table 6, the DMs frequency in the ICLE corpus versus the post-test 1 corpus (PPP) was compared.

Table 6. Log-likelihood test results of comparing the use of DMs between the ICLE corpus and the post-test corpus (PPP)

DM	O1	%1	O2	%2	LL	Bayes
and	121	0.67	193	5.27	-314.17	304.18
or	8	0.04	30	0.82	-70.82	60.83
but	17	0.09	100	2.73	-265.89	255.90
so	20	0.11	32	0.87	-52.19	42.20
thus	5	0.03	0	0.00	+1.84	-8.15
hence	2	0.01	2	0.05	-2.32	-7.67
also	16	0.09	38	1.04	-75.77	65.78
moreover	0	0.00	0	0.00	+0.00	-9.99
furthermore	1	0.01	0	0.00	+0.37	-9.62
in addition to	0	0.00	0	0.00	+0.00	-9.99
particularly	3	0.02	2	0.05	-1.51	-8.48
however	22	0.12	8	0.22	-1.83	-8.16
although	10	0.06	5	0.14	-2.42	-7.57
in comparison to	0	0.00	5	0.14	-17.83	7.84
accordingly	0	0.00	5	0.14	-17.83	7.84
because	12	0.07	54	1.47	-134.40	124.41
since	7	0.04	2	0.05	- 0.17	-9.81
therefore	8	0.04	8	0.22	- 9.29	-0.70
as a result	2	0.01	10	0.27	-25.58	15.59
finally	1	0.01	8	0.22	-22.62	12.63

Note. Based on Rayson (2019), O1 and O2 are the observed frequencies of DMs in the ICLE corpus and post-test 1 corpus (PPP); %1 and %2 values show relative frequencies in the ICLE corpus and the post-test 1 corpus (PPP). LL indicates the log-likelihood value (G^2); "+" before LL indicates overuse in O1 relative to O2, "-" before LL indicates underuse in O1 relative to O2. Bayes Factor (BIC) indicates effect size: 0-2: not worth more than a bare mention; 2-6: positive evidence against H0; 6-10: strong evidence against H0; > 10: very strong evidence against H0.

At last, in Table 7, the DMs frequency in the ICLE corpus versus the post-test 2 corpus (III) was compared.

Table 7. Log-likelihood test results of comparing the use of DMs between the ICLE corpus and the post-test corpus (III)

DMs	O1	%1	O2	%2	LL	Bayes
and	121	0.67	271	8.10	-563.99	554.02
or	8	0.04	23	0.69	-52.82	42.84
but	17	0.09	65	1.94	-163.72	153.74
so	20	0.11	44	1.31	-90.86	80.89
thus	5	0.03	5	0.15	-6.42	-3.55
hence	2	0.01	5	0.15	-10.89	0.92

also	16	0.09	65	1.94	-166.57	156.60
moreover	0	0.00	17	0.51	-63.20	53.23
furthermore	1	0.01	14	0.42	-45.04	35.07
in addition to	0	0.00	5	0.15	-18.59	8.61
particularly	3	0.02	17	0.51	- 47.31	37.34
however	22	0.12	38	1.14	- 69.87	59.90
although	10	0.06	11	0.33	- 15.22	5.25
in comparison to	0	0.00	5	0.15	-18.59	8.61
accordingly	0	0.00	20	0.60	-74.36	64.38
because	12	0.07	23	0.69	- 44.57	34.60
since	7	0.04	0	0.00	+2.37	-7.60
therefore	8	0.04	11	0.33	-17.74	7.77
as a result	2	0.01	8	0.24	-20.41	10.44
finally	1	0.01	11	0.33	-34.35	24.38

Note. Based on Rayson (2019), O1 and O2 are the observed frequencies of DMs in the ICLE corpus and the post-test 2 corpus (III); %1 and %2 values show relative frequencies in the ICLE corpus and the post-test 2 corpus (III). LL indicates the log-likelihood value (G^2); "+" before LL indicates overuse in O1 relative to O2, "-" before LL indicates underuse in O1 relative to O2. Bayes Factor (BIC) indicates effect size: 0-2: not worth more than a bare mention; 2-6: positive evidence against H0; 6-10: strong evidence against H0; > 10: very strong evidence against H0.

4.3 Answering the Research Questions

The present study aimed to investigate the comparative effectiveness of two instructional approaches, III and PPP, on the frequency of DMs employed by Iranian EFL learners in state high schools. The findings revealed notable disparities between the two approaches, with the III approach demonstrating superior efficacy in enhancing the frequency of discourse marker usage among the participants. Firstly, post-test analysis revealed a substantial increase in DM usage after the III treatment compared to the PPP treatment (Tables 3 and 4), suggesting the effectiveness of the III approach in promoting DMs proficiency among Iranian EFL learners. Additionally, qualitative analysis of learner feedback and classroom observations provided further insights into the effectiveness of the instructional approaches. Participants in the III treatment reported greater engagement, enjoyment, and perceived relevance of the instructional materials and activities, which fostered a conducive environment for discourse marker acquisition and application. Conversely, participants in the PPP treatment expressed dissatisfaction with the repetitive and monotonous nature of the instructional tasks, which may have hindered their motivation and engagement. In summary, the study's results provide compelling evidence supporting the superiority of the III approach over the PPP approach in enhancing the frequency of DM usage among Iranian EFL learners in state high schools. These findings underscore the importance of employing effective instructional strategies that promote meaningful interaction, engagement, and language awareness in EFL pedagogy.

5. Discussion

The aim of this study was to investigate the comparative effect of III and PPP approaches on the frequency of use of DMs among Iranian EFL learners in state high schools. To accomplish the study, we collected three different corpora from our participants in different phases of the study and compared them with a normative native corpus, as explained in detail in the procedure section. After gathering the data, we used the log-likelihood and effect size calculators at Lancaster University to determine the efficiency of the treatments. After analyzing the obtained results, it was revealed that the III approach was far more efficient than the PPP approach.

As investigated in the review of the literature section, the PPP and III are two pedagogical approaches that have their own benefits, but there are also some drawbacks related to them. PPP consists of three stages: presentation, practice, and production. When the presentation phase is well designed, it leads learners to notice the new language forms (Hedge, 2000). Among its drawbacks, it can be mentioned that the PPP model is based on discrete items (Scrivener, 1994; Woodward, 1993), as it promotes accuracy over fluency (Willis, 1993). On the other hand, the III approach consists of three stages: illustration, interaction, and induction. McCarthy and Carter (1995), the pioneers of this model, argued that a move away from the PPP to the III is necessary. They believe that access to real data makes learners aware of the nature

of language, which is the main focus of the illustration stage. The interaction stage makes learning cooperative, and the last stage, which is induction, is not followed by controlled practice compared to the PPP model.

It should be mentioned that our obtained results are further confirmation of the claims of Scrivener (1994) and Woodward (1993), that the PPP is based on discrete items, and Willis (1993), declaring that the PPP promotes accuracy over fluency, both stating the insufficiency of the PPP. On the other hand, the gathered results confirm the statement by McCarthy and Carter (1995), mentioning that in III, compared to PPP, the induction stage is not followed by controlled practice. In other words, with this model, learners will find that some areas of language are probabilistically appropriate rather than absolutely correct and that there are cases where they will have to choose between an informal, interpersonal form and a more formal alternative. This means that it may be more appropriate to speak of tendencies, variable rules, and choices than of fixed rules. This shows the flexibility of the III approach compared to the PPP, which again confirms the reliability of the III.

Howard (2010) employed the III method to instruct modal verbs to EFL and English for academic purposes (EAP) students. He found that the pupils considered not only the grammatical structures but also the cause and their usage of language in a certain context. The findings of his research further substantiate the beneficial impact of III, as indicated by the data collected in the present study. In contrast, our findings are inconsistent with those of Lagalo (2013). She provided evidence that using the PPP approach had a beneficial impact on students' oral proficiency and resulted in a noteworthy improvement in their speaking proficiency scores. In general, it can be said that III is a more contemporary method compared to PPP, since it represents the ultimate outcome of our current study. The data obtained from the III approach was significantly more successful than the data obtained from the PPP approach, as evidenced by Tables 6 and 7.

6. Conclusion

This study investigated the effectiveness of two teaching methodologies, III and PPP, on the use of DMs by Iranian EFL learners in state high schools. By comparing these approaches, the research aimed to identify which method led to a higher frequency of accurate DM usage. The III approach resulted in a statistically significant increase in the frequency of accurate DM usage among Iranian EFL learners compared to the PPP approach. Based on the potential findings of the study, the implications for EFL instruction in Iranian state high schools could be as follows:

- Increased focus on III: As III is shown to be more successful in promoting DM usage, Iranian state high schools could integrate this method more prominently into their EFL curriculum. This could involve providing teacher training workshops on the chosen approach, updating textbooks with activities aligned with the method, or even piloting a curriculum shift towards the more effective approach.
- Improved discourse fluency: DMs play a crucial role in spoken fluency by signaling relationships between ideas and structuring conversations. The research, by identifying a method that enhances DM usage, could lead to improved overall spoken fluency among Iranian EFL learners. This, in turn, could boost their confidence and communication skills in English.
- Informing policy and curriculum development: The research findings could inform policy and curriculum development decisions within the Iranian Ministry of Education. III could be recommended for wider adoption of EFL programs across state high schools.
- Teacher autonomy and contextualization: It is important to acknowledge that teachers should have some autonomy in adapting methodologies to their specific student populations and contexts. The research should be seen as a guide, not a rigid prescription. Teachers could adopt elements of both III and PPP or even develop hybrid approaches that best suit their students' needs.

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