The Effect of Online Interaction on the Use of Discourse Markers: A Comparison of Two Flipped Classes

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Abstract

Discourse Markers (DMs) are pragmatic ties representing the relationship between different concepts in a discourse. As Fraser (2009) puts it, these lexical expressions are free morphemes that signal a special message about or in addition to the basic message. Given the importance of DMs in the written discourse of English as foreign language (EFL) learners, this study investigated the effectiveness of two methods of interaction in improving Iranian EFL learners' use of discourse markers (DMs) in writing compositions. The data were drawn from comparing the compositions of two virtual groups of EFL learners who were exposed to two types of online interactions within which different flipped instructional activities were assigned. The data were analyzed both quantitatively and qualitatively. The results showed that the learners who engaged in online discussions used higher numbers of DM in terms of both type and token. The results also showed an increase in the length of compositions in the case of those groups who embarked on online interactions and discussions of flipped content. The findings suggest that once supported by the provision of flipped content, online interactions help create authentic opportunities for learner-centered discussions, which lead to an increased authenticity level of the EFL learners' language production. The findings might also

underscore the significance of flipped content and online interactions in developing other aspects of EFL learners' pragmatic competence.

Keywords: Online Interaction, Flipped Learning, Written Discourse, Discourse Markers, EFL Learners

Concerning the significance of the writing skill and its development in foreign language learning contexts, many English as a Foreign Language (EFL) learners are believed to be learning English to pursue their academic and/or professional goals. It is evident that without writing coherently, appropriately, and naturally, achieving goals in such academic and professional contexts seems to be impossible. Among the required elements of a well-structured and coherent written text, discourse markers are quite salient (Jalilifar, 2008).

While a group of linguists reduces DMs to cohesive ties, which play a secondary role in the flow of the ideas in written discourse (Carrell, 1982), others believe that DMs help the readers arrive at a coherent interpretation of the written discourse (Povolna, 2012). Maschler and Schiffrin (2015, p. 205) maintain that " discourse markers tell us not only about the linguistic properties (e.g., semantic and pragmatic meanings, source, functions) of a set of frequently used expressions, and the organization of social interactions and situations in which they are used, but also about the cognitive, expressive, social, and textual competence of those who use them".

Apart from the significance of discourse markers for the coherence of a written text, knowledge of discourse markers is positively correlated with EFL learners' proficiency in other language skills such as reading comprehension (Khatib & Safari, 2011) and listening comprehension (Eslami & Eslami-Rasekh, 2007). According to Jalilifar (2008), a direct and positive relationship

exists between the number of well-functioned discourse markers and the quality of the EFL learners' compositions. Thus, in the EFL learners' pursuit of success in both academic and non-academic contexts, appropriate use of such connecting devices seems to be of determining significance.

The significance of such connecting devices for EFL learners' written discourse has been empirically verified as well. Studies have shown that the EFL learners recognize the importance of discourse markers in their compositions; however, they do not have a clear mind about the proper usages of different DMs (Kalajahi et al., 2012), or they suffer from pragmatic fossilization of DMs' use (Trillo, 2002). Among other reasons, such problems are due to the fact that the EFL learners are not widely exposed to high-frequency DMs; moreover, they are taught by nonnative teachers who underuse DMs compared with native teachers in EFL classrooms (Ozer & Okan, 2018)

In attempts to partially address the problem, different strategies are suggested to increase EFL teachers' and learners' participation in various activities designed to ultimately stimulate enhanced frequency of DMs' use (Webb et al., 2007). This initiative is partly rooted in the belief that ample exposure to a high frequency of DMs and their natural use has a major effect on the language learners' use of DMs in different discursive practices. In addition, educational systems are undergoing a massive and huge transformation as a result of recurring digital revolutions, and teachers are recommended to use such technological innovations to offer a wide range of authentic learning opportunities to the applicants and, in this way, take education out of traditional classrooms into homes, libraries, internet cafes, and workplaces (Collins & Halverson, 2010). It is noteworthy that while recent studies generally confirm that the developments of information

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technology offer alternative innovations to improve L2 learners' language skills' development (e.g., Miyazoe & Anderson, 2010), the development of writing skill and written discourse improvement through online interactions have been specifically highlighted (e.g., Li, 2018; Haghighi et al., 2019) partly because online writing exhibits a larger lexical range, more interaction and leads to greater equality in participation (Fitze, 2006).

Such findings signify distant learning environments such as blogs, Wikis, and portfolios in that they change the interaction habits of the learners. In addition, the need for the learners' physical attendance in traditional classes is minimized as a result of such technological innovations in education (Faramarzi et al., 2019). On this basis, various types of online learning applications and gadgets have also been designed and introduced in recent years. Mobile-Assisted Language Learning (MALL), as an instance of such an innovative online educational environment, is welcome by language learners. It is believed to enhance communication potentials between the learners and teachers (Dashtestani, 2016). Still, alternative teaching and learning innovative contrivance in such a context is flipped learning approach, which integrates technology into language learning, and provides considerable opportunities for the students to learn (McLaughlin et al., 2014).

In a traditional class, new information is presented in the classroom, usually via lectures, and students are asked to practice the lesson at home via homework. In contrast, flipped learning reverses this procedure by providing the knowledge for the students before the class using technology (Wu, Hsieh & Yang, 2017). The main idea is to flip the lecture-based classroom instruction and utilize some prerecorded videos or assignments prior to the class in order to use the class time to engage the learners in problem-based collaborative learning (Bates et al., 2017). Moreover, flipped learning plays a

significant role in fostering students' self-directed learning as the individuals can replay the videos and do the assignments on the basis of their learning needs to fully accomplish the contents based on their learning differences prior to their class attendance (Tse, Choi & Tang, 2019).

Flipped learning seems to be especially effective in composition writing tasks. It can promote active learning in writing courses and increase learners' motivation to use technology for language learning (Buitrago & Diaz, 2018). In an attempt to assess the tentative efficacy of flipped learning for language learners' written discourse development, this study set out to examine its impact on Iranian EFL learners' development and use of DMs in written compositions.

From a theoretical perspective, Schiffrin (1987) defined DMs as "sequentially dependent elements which bracket units of talk" (p. 41). Fraser (1999, p.933) described them as "a class of lexical expressions drawn primarily from the syntactic classes of conjunctions, adverbs, and prepositional phrases. Fraser (2009) understands discourse markers as part of pragmatic markers which are collected from different syntactic classes. On the other hand, from an operational perspective, Fraser (2009) classified DMs into three functional classes of Contrastive Discourse Markers (CDMs), Elaborative Discourse Markers (EDMs), and Inferential Discourse Markers (IDMs).

CDMs refer to those markers that are used to show that the interpretation of one part of the discourse is in contrast with another part that is in the prior or upcoming discourse. Examples of CDMs are *but, despite, however, although, on the other hand,* and *yet*. EDMs constitute an elaboration of the message in discourse. Examples of EDMs are *and, or, also, moreover, in addition,* and *similarly*. IDMs signal the force of the utterance as an inference

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or conclusion which follows from the preceding discourse. Examples of IDMs are *so, because (of this/that), thus, after all*, and *hence.* Moreover, Fraser (2009, p. 301) indicates that the first marker in each class (i.e., *but*, *and*, and *so*) is the given class's primary marker, which has the broadest meaning compared to the other markers of the same class.

While native English speakers consider DMs as one of the top 10 word forms (Allwood, 1996), EFL learners do not use DMs as variably and frequently as native speakers (Fung & Carter, 2007). The limited variety of the use of DMs by the EFL learners might be partially due to a relative lack of explicit educational forms-focused instruction of DMs in EFL educational programs. This openly calls for the language teachers' prompt attention and requires them to elevate the incorporation of DMs in their writing course syllabuses (Eslami & Eslami-Rasekh, 2007; Ozer & Okan, 2018; Rahimi & Riasati, 2012). Against the background of all the aforementioned factors, the current study examines the efficacy of flipped learning approach for the EFL learners' use of DMs in written discourse. The research is based on the premise that flipped content and online discussions about the provided content increase the learners' exposure to the intended language forms, which are usually underrepresented in regular EFL learning contexts.

Literature Review

The use of technology has become increasingly popular in language teaching and learning contexts. As a prominent and promising instance of the use of technology in language teaching, computer-assisted language learning (CALL) has attracted many researchers and practitioners' attention partly on the grounds that it provides an environment in which learning is facilitated through feedback and interaction so that everyone can learn at any time and

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in any place (Liu & Chen, 2015). Confirming the potential CALL introduces to language pedagogy; however, some scholars believe that the nature, type, and the degree of feedback and their potential educational effects are different from face-to-face interaction (Nassaji, 2016) and in need of further studies.

Researchers also talk about the integration of technology and communication to combine print-based texts with some features of face-to-face interactions such as turn-taking, cooperation, and feedback provision (Lee, 2002) in stress-free discussion groups to collaborate with each other and develop their writing skill (Awada et al., 2020).

From a constructivist perspective, collaborative learning, which takes place through online interaction, might be theoretically justified. According to the constructivist approach, online prompts aim to facilitate online discussions and in-class activities to reduce the cognitive overload of complex information (Apedoe et al., 2017). These facilitators could be visual, audio, or print materials to provide a form of pre-training for the learners and encourage them to be responsible for developing their own understanding. Moreover, both teachers and learners have the opportunity to give feedback in online discussions. Furthermore, to transfer and comprehend a message in online communication, the speakers and listeners need to employ a variety of discourse strategies, including discourse markers, linguistic contraction, abbreviations, or prosodic features (Park, 2007).

Flipped Learning

A recent approach to flipped classrooms is generally related to the studies of two high school teachers in Colorado, Jonathan Bergmann and Aaron Sams, who in an attempt to accommodate their students who missed classes, provided some videos for the students prior to the classes and named it

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"reverse instruction" (Green, Banas & Perkins, 2016) or "flipped classroom" (Pink, 2010). Flipped classroom methodology gained popularity among EFL researchers after 2014, and the number of studies rapidly increased in 2016 and 2017, mainly focusing on speaking and writing skills (Turan & Akdag-Cimen, 2019).

In a flipped classroom, the instructional content (e.g., prerecorded class lectures) is given as an assignment before the class, and the class time is spent working on the problems, giving feedback, and engaging in collaborative activities (Findlay-Thompson & Mombourquette, 2014). Such a procedure allows the instructors to spend more time working with individuals (Roehl et al., 2013), and the classroom atmosphere is predominantly learner-centered (McLaughlin et al., 2014). Moreover, the creation of an interactive and dynamic environment is facilitated, and instructional flexibility is achieved (Amiryousefi, 2019). The creation of a learner-centered atmosphere is partly due to the fact that the learners have an increased potential for communication in flipped classrooms (Yilmaz, 2016), and the instructors can play the role of facilitators of communication even in teamwork and interactions outside the class (Blau & Shamir-Inbul, 2017)

The potential of flipped instruction has been explored from different vantage points. For example, Wu et al. (2017) studied the potential of mobile platforms for enhancing EFL learners' oral proficiency by creating an online learning community in a flipped classroom. The results showed that the online learning community facilitated meaningful and positive collaboration, and it also improved learners' oral proficiency significantly. They also indicated that learners were more active in interactive learning activities, including storytelling, dialogue collaboration, and class discussions. Focusing on the oral proficiency of Iranian EFL learners, Amiryousefi (2019) assigned 67

university students at intermediate or upper-intermediate levels of English proficiency to different groups and used Telegram as an online platform for the learners to perform preparatory works in a collaborative manner. The findings revealed that flipped learning improved the EFL students' speaking and listening skills. Learners were also more engaged with the materials and activities outside the classrooms. In a similar context, Haghighi et al. (2019) explored the impact of flipped learning on 60 Iranian university students' pragmatic competence development and indicated that flipped activities such as watching lecture videos, video clips, visiting websites, and reading materials of the assigned lesson prior to the class improved EFL learners' pragmatic competence.

Finally, Buitrago and Díaz (2018) demonstrated that flipping the EFL writing lessons could optimize their classroom time. They suggested that pre-class and in-class activities make the flip of the writing part possible. The students' written discourse displayed improvement in some aspects, including task fulfillment, language use, discourse and lexical resource, and mechanics. Their compositions also showed improvement in cohesion and coherence as the learners produced well-framed and organized pieces of writing and made excellent use of DMs. The findings of the study verified the special efficiency of flipped learning approach for the EFL learners' composition writing.

The brief literature reviewed above highlighted the positive potentials of technology-mediated collaborative learning and flipped learning in language learning educational contexts. However, the impacts of such innovative instructional procedures on many specific cognitive aspects of language learners' skills development are yet to be explored and documented. On this basis and against the backdrop of the reviewed literature, it seems that the impact of flipped learning and online instruction on the development and use

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of DMs in the EFL learners' written discourse, though quite justified, has barely received the researchers' attention. Hence as a partial attempt in this regard, the present study aimed to explore the impact of the provision of highly intensive online exposure and/or flipped learning packs on the EFL learners' development and use of DMs in their written discourse. For this purpose, the following research questions were formulated:

RQ1: Do the flipped interactional activities affect the frequency of the use of DMs in Iranian EFL learners' composition?

RQ2: Do the flipped interactional activities affect the length of the Iranian EFL learners' written discourse?

RQ3: Do the flipped interactional activities affect the accuracy of the use of DMs in the Iranian EFL learners' composition?

RQ4: Do the flipped interactional activities affect the frequency of the use of different types of DMs in Iranian EFL learners' composition?

RQ5: How do interactional activities affect the Iranian EFL learners' use of different types of DMs in their written discourse?

Method

Design

As a true random selection of participants for the study was not feasible for the researchers, they adopted a quasi-experimental design. Thus, six upper-intermediate level intact EFL classes were randomly chosen from a single well-known language academy for the study purposes. Prior to conducting any study-related activity, the selected sample was informed of their inclusion in a research project, and their informed consent to participate was obtained. The assignment of the intact classes to the experimental and control groups was done on a random basis. After the assignment of the groups, the pretest,

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treatment, and posttest phases followed, and finally, quantitative and qualitative analyses were carried out on the obtained data.

Participants

This study took place at an adult EFL language academy in Tehran and a total number of 56 conveniently sampled female EFL upper intermediate learners from six intact classes of the language academy took part in the project. These participants were assigned into groups of experimentation and a control group. The participants were all familiar with and users of the Telegram social networking application. Of course, other applications were equally acceptable in the current study, but Telegram was employed as it was available for all the learners in this study. They were all native Farsi speakers and aged between 15 and 29. About 56 percent were graduate or undergraduate university students, and the remaining 44 percent were high school students or graduates. It is noteworthy that all Iranian official language academies across the country are segregated in terms of the gender of the language learners. Hence all participants of the current study who were selected from a single academy were female. Moreover, the only determining factor for the placement of the recruited learners in different classes was the result they gained from a placement test of English general proficiency, and their age or educational background played no role in this regard.

Instruments

Quick Oxford Placement Test (QOPT): A sample QOPT (Allen, 2004) was utilized to ensure the homogeneity of the participants' general English proficiency level. QOPT is a validated proficiency test consisting of 60 items

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aiming to assess the learners' knowledge of grammar, vocabulary, and reading comprehension.

As the second instrument, six topics were chosen from the IELTS writing tasks and used as the composition topics, and also four topics were chosen from the speaking part 2 of IELTS exams to be used in the online discussions of the experimental group. These topics were adopted from two series of books called Cambridge Practice Tests for IELTS Series (1-11) and Collins English for IELTS.

Finally, three instructional video clips focusing on DMs were downloaded from YouTube as out-of-class flipped materials, and some questions were formed about their content. The first video addressed coherence and cohesion criteria and commented on the use of DMs for these purposes. The second video described adverb clauses and the DMs that are used to link such clauses. The third video explained the writing transitions, especially those that join similar and supporting ideas.

Procedure

After the initial selection and informed consent obtainment phases, QOPT was administered to 59 upper-intermediate learners. Based on the results, three learners were excluded from the study as they failed to reach the required standard for the upper-intermediate level (scores 40 to 47 out of 60 according to the test rubrics).

The remaining 56 participants were randomly divided into an experimental and a control group. The experimental group comprised 32 learners who were divided into three sub-groups, including two groups of 11 learners and a group of 10 learners. The control group consisted of 24 learners who were classified into two 12-member sub-groups.

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The experimental group members joined three virtual groups on Telegram created by the academy. The participants were then informed of the procedure and were required to write a regular paper and pencil composition consisting of 120-140 words on a given topic from the IELTS writing tasks as the pretest. Next, the teacher reviewed the compositions, highlighted the mistakes, and gave general feedback in the classroom accordingly. This feedback focused not only on DMs but also on all different types of mistakes found in the compositions.

During the upcoming six weeks of study treatment, the learners wrote five similar compositions on the topics already described above and received feedback from their teacher. Secondly, they were also required to watch the three video clips related to DMs as out-of-class flipped learning material. These clips were assigned one by one prior to the second, third and fourth sessions, but they were always available in the Telegram groups so that the participants could play and replay the videos any time, before or after the class. Following the assignment of each flipped material, the teacher raised some questions about the content of the clips to ensure that they watched the videos before class time.

Thirdly, the experimental group engaged in four online speaking activities on Telegram during the course. Thus, the four topics chosen from the speaking part of the IELTS exams were assigned one by one in four separate online sessions, and the participants were given the opportunity to reflect on each topic prior to the discussions and discuss their viewpoints. Each discussion session took around 80-90 minutes, and they were allowed to share their opinion and experiences. They also had the opportunity to give or receive feedback on the discussions. Moreover, they could send photos, voice messages, or even emojis to convey meaning on Telegram. The teacher also

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participated in the group to facilitate the discussions and make sure that all participants had their contributions, and provide some data for general feedback at the end of each discussion. Such interactional activities enabled the participants to boost critical thinking through checking their comprehension, writing coherence, and clarification of the feedback in a meaningful learning environment, which could be reviewed after the speaking activities. Moreover, they were exposed to a varied range of ideas from their peers, which could further enhance their learning outcomes.

As for the regular classes with the physical attendance of the participants, the experimental group members also participated in different activities inside the classroom. First, the teacher asked the learners to have a reflection on the video clips, and she asked some questions about the content of each one, followed by some feedback on their understanding. Second, the learners joined various group discussions over the related topics chosen from IELTS writing task 2 to help them get familiar with the underlying concepts before writing the compositions. Third, the teacher returned the previous session's compositions and provided general feedback. Finally, the teacher presented the topic of the new composition, and the learners had 30 minutes to submit the paper before leaving the classroom.

On the other hand, the participants of the control group were provided with the same three video clips as out-of-class activity materials, and they followed the same procedure for inside the class practices. However, they did not have any interactional activities outside the Telegram classroom, and they did not have access to the online discussions provided for the experimental group.

The first (pretest) and the sixth (posttest) compositions gathered from the groups were later analyzed and rated by two MA-holding experts in applied

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linguistics who had been teaching English for more than 12 years. The raters were trained in a single debriefing session to look for DMs and the accuracy of their use in the compositions of the two groups. They also counted the frequency of these markers and the number of words and sentences in each individual composition. In order to check inter-rater reliability, the compositions were rated by both raters distinctively, and the obtained inter-rater reliability was estimated to be .96.

Results

In order to statistically analyze the obtained data, Statistical Package for the Social Sciences (SPSS) was applied. The DMs used by the participants of the groups in both pre and posttests were identified, categorized, and quantified. In addition to quantitative analyses, qualitative data analyses were carried out on the participants' written discourse. In the following parts, the respective analyses and the results for research questions are presented.

The first research question aimed to explore the impacts of interactional activities on the use of DMs in the compositions of the groups. The descriptive statistics concerning the use of DMs in pre and posttest compositions of the two groups is tabulated in Table 1 below.

Table 1

The Frequency of DMs for each Group's Pre and Posttest Compositions

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-control	5.95	37	16.49	2.71
	Post- control	6.03	37	19.14	3.14
Pair 2	Pre- experimental	6.92	37	23.76	3.90
	Post- experimental	13.57	37	29.35	4.82

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As shown in Table 1, the pretest means score for the use of 37 DMs was 5.95 in the control group and 6.92 for the experimental group. Comparing the posttests indicated that the mean scores displayed some changes (6.03 for the control group vs. 13.57 for the experimental group).

A paired-samples t-test was conducted to assess the statistical significance of the differences between the two groups' pre and post-testt performances (Table 2).

Table 2

Paired Samples t-test Analysis of the Groups' Use of DMs

	Paired Differences					t	Df	Sig. (2 tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pre.control-Post.control	-.08	3.93	.64	-1.39	1.23	-.12	36	.90
Pre.experimental–Post.experimental	-6.64	7.71	1.26	-9.22	-4.07	-5.24	36	.00

The results of paired samples t-test indicated that there was a statistically significant increase in the number of DMs from the pretest of the experimental group (M= 6.92, SD=23.76) to the posttest (M= 13.57, SD=29.35), t=-5.24, p=.00<0.05 (two-tailed), while there was not a statistically significant increase in the frequency of DMs comparing the pretest of the control group (M= 5.95, SD=16.49), with its posttest results (M= 6.03, SD=19.14), t=-.12, p=.90>0.05 (two-tailed). The statistical significance of the differences between the pre and

posttest mean scores of the experimental group underscores the positive impacts of the interventions, including interactional activities, flipped learning and the discussions on the frequency of DMs' use.

The second and the third research questions explored the effect of interactional activities on the length of written discourse and the accuracy of the DMs' use. To answer these questions, the compositions were analyzed based on the number of words, correct and incorrect DMs used, and the number of sentences (Table 3). The percentages of correct and incorrect use of the 37 DMs by the participants of the two groups in their compositions were calculated by dividing the correct or incorrect use of DMs by the total number of DMs. In addition, the number of DMs per sentence was calculated to explore the possible changes in the frequency of DMs per sentence.

Table 3

Descriptive Information of the Components of the Compositions and the Use of DMs

	Words	Mean No. Correct DMs (per paper)	%correct use of DMs	%incorrect use of DMs	Mean No. Sentences (Per paper)	Number of DMs (per sentence)
Pretest						
Control group	105.41	9.16	98.64	1.36	4.83	0.52
Experimental group	110.31	8	97.66	2.34	4.62	0.57
Posttest						
Control group	125.95	9.26	98.21	1.79	6.37	0.68
Experimental group	172.59	15.68	97.02	2.98	9.87	0.62

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Based on results summarized in Table 3, the average length of compositions varied from 4.83 to 6.37 sentences in the pre and posttest of the control group, respectively. This range was from 4.62 to 9.87 sentences in the pre and posttest of the experimental group, respectively.

Table 3 further documents that the average number of DMs had an increase from 8 in the pretest to 15.68 in the posttest, and the number of DMs per sentence increased from .57 to .62 in the experimental group's papers. Furthermore, the average number of DMs in the control group's papers had a slight increase from 9.16 in the pretest to 9.26 in the posttest of the control group, and the number of DMs per sentence increased from .52 to .68, respectively. However, the number of DMs and the percentage of correct and incorrect use of DMs did not change markedly in both groups' papers which might indicate that online interaction did not significantly affect the accuracy of DMs in the compositions.

To answer the fourth research question, the number and percentage of the correct use of individual DMs were counted and descriptively analyzed based on the number of both experimental and control group participants' compositions before and after the treatment. To calculate the percentage, the total number of the DMs of each group was used.

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Table 4

The Number and Percentage of Individual DMs Used in the Control and Experimental Groups' Compositions before and after the Treatment

	Individual DMs	Correct Pre-experimental		Correct Post-experimental		Correct Pre-control		Correct Post- control	
		No.	%	No.	%	No.	%	No.	%
Contrastive discourse markers	but	4	1.56	28	5.58	13	5.91	9	4.04
	on the other hand	1	.39	15	2.99	4	1.82	4	1.79
	any way	1	.39	2	.40	0	.00	0	.00
	instead of	0	.00	4	.80	0	.00	0	.00
	rather than	0	.00	5	1.00	0	.00	0	.00
	in spite of	0	.00	4	.80	0	.00	0	.00
	yet	0	.00	1	.20	0	.00	0	.00
	while	0	.00	4	.80	0	.00	1	.45
	although	1	.39	9	1.79	0	.00	4	1.79
	though	0	.00	2	.40	0	.00	1	.45
Elaborative discourse markers	and	143	55.86	180	35.86	96	43.64	115	51.57
	or	16	6.25	35	6.97	16	7.27	16	7.17
	for example	3	1.17	10	1.99	5	2.27	4	1.79
	also	10	3.91	20	3.98	5	2.27	9	4.04
	too	2	.78	5	1.00	2	.91	1	.45
	in addition	0	.00	13	2.59	1	.45	1	.45
	moreover	0	.00	8	1.59	1	.45	1	.45
	besides	0	.00	3	.60	0	.00	0	.00
	like (for example)	1	.39	8	1.59	8	3.64	2	.90
	such as	1	.39	6	1.20	1	.45	2	.90
	another reason	1	.39	10	1.99	0	.00	0	.00
	not only...but also	1	.39	2	.40	0	.00	0	.00
	as well	0	.00	5	1.00	0	.00	0	.00
	etc.	1	.39	18	3.59	6	2.73	5	2.24
	kind of	0	.00	5	1.00	1	.45	0	.00

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	Individual DMs	Correct Pre-experimental		Correct Post-experimental		Correct Pre-control		Correct Post- control	
		No.	%	No.	%	No.	%	No.	%
Inferential discourse markers	because	27	10.55	33	6.57	28	12.73	25	11.21
	because of	11	4.30	12	2.39	7	3.18	4	1.79
	so	11	4.30	12	2.39	4	1.82	4	1.79
	for (the reason of)	17	6.64	11	2.19	21	9.55	12	5.38
	consequently	0	.00	4	.80	0	.00	0	.00
	as a result	1	.39	3	.60	0	.00	0	.00
	therefore	0	.00	2	.40	0	.00	0	.00
	another reason	1	.39	10	1.99	0	.00	0	.00
	in conclusion	0	.00	6	1.20	1	.45	0	.00
	due to	1	.39	0	.00	0	.00	0	.00
	at/in the end	1	.39	3	.60	0	.00	1	.45
	as (because)	0	.00	4	.80	0	.00	2	.90
Total		256	100	502	100	220	100	223	100

The distribution of different DMs in the first composition of the experimental group shows that *and* as an elaborative marker had the highest percentage (55.86%). The other most used markers were *because* (IDM), *for (the reason of)* (IDM), and *or* (EDM). The little usage of CDMs shows that the learners avoided using DMs for denials or contrasts in conveying messages. The distribution of different DMs in the first composition of the control group also showed similar characteristics in that *and* had the highest percentage (43.64%). The other most used markers were *because* (IDM), *for (the reason of)* (IDM), *or* (EDM), and *but* (CDM).

However, the comparison of the pretest and posttest of the experimental group showed more variation of DMs in the compositions and changes in their rhetorical strategies, probably because of online interactional activities. Thus, it is apparently verified that online interaction helped them to be better users

of DMs as higher rate and variation of markers were found in their written discourse. As it is indicated in Table 4, *and* still held the highest percentage (35.85%) while the other DMs were less frequently employed; however, the percentage of its use was less than the pretest percentage (55.86%). Instead, some other EDMs, such as *or*, *for example*, *also*, *too*, *like*, *another reason,* and *etc.,* were used more frequently. In addition, some CDMs which were used less frequently or not used in the pretest appeared in the posttest of the experimental group including *in spite of, rather than, on the other hand, while, though,* and *although*.

The distribution of different DMs in the control group's compositions indicated that *and* was the most frequent DM in the pretest (43.64%) and the posttest (51.57%). The other most frequent DMs were *because*, *for (the reason of)* and *or*. The results also showed that CDMs were less frequently used in the compositions though the most frequently applied DM of this type was *but*.

In addition to descriptive statistical analyses, a Chi-square analysis was run to compare the frequency of different types of DMs used by the experimental and control groups before and after the treatment. The results are presented in Table 5.

Table 5

The Frequency of DMs Used by the Experimental and Control Group before and after the Treatment

DMs	Groups	Percentage		Pearson Chi-square value	df	Asym. Sig.
		Pretest	Posttest			
Contrastive	Experimental	8.6% 7	91.4% 74	4.95	9	.83
	Control	47.2% 17	52.8% 19	6.63	4	.15

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DMs	Groups	Percentage		Pearson Chi-square value	df	Asym. Sig.
		Pretest	Posttest			
Elaborative	Experimental	35.3% 179	64.7% 328	45.79	14	.00
	Control	47.7% 142	52.3% 156	7.68	10	.66
Inferential	Experimental	41.2% 70	58.8% 100	23.78	11	.01
	Control	56.0% 61	44.0% 48	5.97	6	.42

As Table 5 indicates, the frequency of all types of DMs markedly increased after the intervention in the experimental group. Although significant differences were found among the experimental groups' use of EDMs and IDMs ($p < 0.05$) before and after the intervention, the frequency of the use of CDM was not found to be significantly different before and after the treatment for both experimental ($p=.83>0.05$) and control ($p=.15>0.05$) groups.

Qualitative Analysis

In order to answer the fifth research question, the first (pretest) and the last (posttest) compositions of all the participants in both groups were analyzed quantitatively. To this end, the classification provided by Fraser (2009) was used for analyzing the data qualitatively. Based on this classification, DMs are divided into three types of CDMs (e.g., but), EDMs (e.g., and), and IDMs (e.g., so):

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Elaborative Discourse Markers

EDMs were found to have the highest frequency of occurrence in written compositions of Iranian EFL learners (Table 5). According to Fraser (2009), EDMs are used to illustrate a statement and give signals to the readers that there is more than one point to be explained. It is also used to give examples or refine the prior discourse. By making such an illustration, the writer adapts linguistic choices to guide the hearers to interpret appropriately. For instance, in example 1 below:

Example 1: *I must mention that scientists believe that English is the language of science and I think it is correct.*

And is a marker that makes the readers interpret a parallel message and has an additive function. Thus, *and* guides the readers in their interpretation of what the following discourse is about; i.e., the second segment is an implication of the first segment in the given context.

The second most frequent EDMs was *or*. As is evident in example 2

Example 2: *They have to travel to other places because they are accepted at university or they want to live in another country.*

Or indicates that what immediately follows is another related explanation. Of course, this DM can be used to introduce the consequences of failure to do something (e.g., hurry up, *or* you will miss it). Notably, no instances of such function of *or* was found in this study.

Inferential Discourse Markers

The second highly used DMs in the written compositions of Iranian EFL learners were IDMs (Table 5). IDMs signal an interpretation for inference or conclusion. Some of the excerpts are given below:

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Example 3: *People are traveling more than before because they want to know about other cultures and get some information about them.*

In Example (3), *because* signifies the reasons for the content of prior discourse so the reader can easily understand that the reason for traveling is knowing more about other cultures and getting some information about them. According to this study's obtained results, Iranian EFL learners used *because* more frequently than the other IDMs (Table 4).

The third most frequent IDMs was *so*. As is illustrated below in example 4,

Example 4: *As a teenager, I love to study in Harvard University or go to an important college so, if I don't know English, I can't study there.*

So signals a consequence for the prior discourse, and it proposes that learning English is essential before entering Harvard University or an important college. In other words, the upcoming conclusive remark is built upon the preceding premise.

Contrastive Discourse Markers

CDMs were found to have the lowest frequency (Table 5) in Iranian EFL learners' compositions. They were employed to indicate a denial or contrast of a message associated with a prior discourse.

The most frequent CDM was *but* (Table 4), which according to Fraser (1996, p.867), is "so ubiquitous". As in example 5,

Example 5: *Millions of people every year move to English speaking countries to study in schools or universities but the question is that why so many people want to study in English?*

But is used to signal the denial of the former proposition. In example 5, *but* is preceded by a declarative statement and followed by an interrogative

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sentence questioning the rationale behind the preceding statement. But in Example (6), *but* signifies a contrast between the prior and upcoming ideas:

Example 6: *I think people are being encouraged to leave their countries to have better life but if they make an effort in their own countries, they can be successful sooner.*

The second most frequently used CDM was, *on the other hand* (see Table 4), the function of which is to declare a contrastive relationship between the two messages. In the following excerpt, for instance,

Example 7: *So, you understand that English is a very good language and necessary to know. On the other hand, if you don't know it, people will call you an illiterate.*

The writer wanted to signal to the reader that the upcoming premise is also correct, and the foregoing one might not be fully acceptable.

Discussion

The fact that online interaction can facilitate learning in general has been frequently verified in recent studies (Kukulska-Hulme & Viberg, 2018; Ma, 2020; Haghighi et al., 2019); however, in an attempt to specifically study the impact of such interaction on EFL learners' writing ability development this study explored whether online interaction could have any effect on the use of DMs among Iranian EFL learners. The findings of this study indicated that online interaction accompanied with flipped learning materials improved EFL learners' written discourse in general and the use of DMs in specific. This might indicate that EFL learners' increased engagement and technologically facilitated peer interactions in online discussion groups have been effective for their writing skill development. In line with this piece of finding, Williams (2012) states that such collaboration promotes reflection on L2 development

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when doing a writing activity. Such findings might, in turn, at least partially entail or be due to the fact that flipped learning offers the learners more opportunities to reflect on their learning, use the vast online and offline information available in their interactions and build and support their claims on/through different audiovisual or textual materials retrieved from different webpages and cyberspaces (Chun, 1994; Park, 2007; Wu et al., 2017).

Addressing the first research question, the findings confirmed that online interaction significantly increased the frequency of the use of DMs in the learners' compositions. This might be partially due to their awareness through interactions of the necessity of output modification to facilitate comprehension of the intended discourse meaning. During such speech modification, the EFL learners used DMs more frequently.

Quite consistent with the stated reasoning, Lee (2002, 2009) argued that online discussions provide conversational style written discourse with a wide range of speech acts and discourse markers. Through online conversations, the learners take risks of using more different types of DMs to make a coherent text and promote comprehension.

The findings gained for the second research question showed that the length of the compositions (in terms of the word and sentence counts) also increased after the treatment. This finding empirically indicates that online interactions helped the EFL learners to be more eloquently expressive and less concise in their compositions. Such a development might not be easily available in face-to-face interactions as the learners cannot keep a record of the discussions. Such findings are partly similar to those of Buitrago and Díaz (2018), who showed the effectiveness of the flipped approach in enhancing the compositions' word number and the frequency of the use of DMs.

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Surprisingly, the findings for the third research question did not verify any significant improvement in the accuracy of the use of DMs. This might be partly attributable to the nature of interactions in cyberspace. As Lee (2001, 2002) confirmed, synchronous conversations taking place in cyberspace encourage the learners to focus on fluency rather than accuracy. Lee (2002) also contended that learner-to-learner online interactions promoted conveying the meaning through the language instead of focusing on wrong language items, which might hinder the flow of communications.

On the other hand, our findings for the fourth research question indicated that the frequency of the use of different types of DMs markedly increased after the treatment. It means that the increased collaboration among the participants in this study and increased chances of speech production (i.e., online discussions) led to a higher frequency of DMs' use. This might partially support Jalilifar (2008), who verified that increasing the learners' writing experience is positively associated with the number of DMs used. He also confirmed that such exposures decrease the number of EDMs and increase the use of other types of DMs. Our findings also indicated that the Iranian EFL learners' most frequently used DMs were EDMs, followed by IDMs and CDMs, respectively. This is in line with Faghih and Mousaee (2015), who analyzed INTERPOL electronic messages written by Iranians who reported the same order for the most frequent use of DMs. The results also indicated that *and* was the most frequently used EDM in particular and DM in general. This piece of finding aligns with the findings of some other studies done on native and/or nonnative English speakers (e.g., Dalili & Dastjerdi, 2013; Jalilifar, 2008; Rahimi, 2011). In addition, the findings indicated that the frequency of the use of EDMs and IDMs significantly increased after the treatment, while the same increase was not verified for CDMs.

Qualitative analyses (concerning the fifth research question) illuminated the ways that Iranian EFL learners used different types of DMs in their compositions. As discussed before, pieces of evidence were found concerning the most frequently used DMs in the Iranian EFL learners' compositions which lent support to the classification of most frequently used DMs provided by Fraser (2009). However, some DMs were found not to be used by the current study participants. Different factors such as a limited number of compositions or the writing proficiency level of the participants might have been influential in this regard. Dalili and Dastjerdi (2013) confirmed that the use of DMs is affected by different factors, such as learners' proficiency level.

Overall, the results showed that online interactive activities could enhance the quality of written discourse. In addition to priorly stated reasons, this might also be partly because online interaction gives the participants time to preserve or revisit messages that they exchange with each other and reflect on the discourse to enhance the depth and quality of the discussions (Park, 2007). Online interaction is also effective in maintaining the students' motivation, which promotes the quality of their learning (Wu et al., 2017). In other words, learners play a central role in online interaction, and they are allowed to decide about both teaching and learning rate and route. In addition, they are not even forced to follow the teacher or curriculum. This means that they can learn in a flexible and personalized learning environment (Pratt & Kovatcheva, 2018).

Finally, the present study's findings strongly confirm those of Mohd Nor et al. (2012). They emphasized that online collaboration provides more learning opportunities than traditional face-to-face interaction. Such online negotiation allows learners to ask questions, share their resources, and express their opinions through pictures, voice messages, emojis, stickers, and gifts to

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prove a claim or criticize an argument idea. Moreover, learners contribute more frequently than in traditional face-to-face discourse, and they are provided with more equal participation chances (Chun, 1994; Kern, 1995).

Conclusion

The study presented a pragmatic account of Discourse Markers' use in upper-intermediate Iranian EFL learners' compositions before and after being exposed to online interactional activities. The comparisons between the flipped group who only received video clips as out-of-class activities and the other flipped group who received the movies and online interactional speaking activities on Telegram revealed that both groups did not markedly change in terms of the levels of DMs' accurate use while the latter group outperformed the former group on the frequency of use of DMs and the length of their written discourse. The analyses also revealed that there was a significant increase in the use of EDMs and IDMs in the compositions of the group who engaged in online interactions, while this increase was not statistically significant in the use of CDMs.

The reported findings might imply that the educators need to revisit their belief system on online classes and think more pragmatically about ample educational opportunities provided in cyberspace. The educational systems could also use the findings. In this way, learners are expected to be exposed to an extensive range of ideas provided by their peers that could help them have more reflection on their written discourse and promote language learning.

The generalizations of the findings of the study are subject to certain limitations. First, the data were drawn from some intact classes as a random selection of the participants was not feasible for the researchers. Second, the

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study was limited to exploring the impact of flipped interactions on a single aspect of written discourse, i.e., the accuracy and frequency of the use of DMs. It is quite evident that many other aspects of written discourse are left outside the scope of the study.

On the basis of the study results, the researchers are suggested to explore the impacts of online interactions and flipped learning materials on the development of other pragmatic aspects of foreign language learners' written discourse. Furthermore, in addition to synchronous online interactions, future studies are recommended to explore the impact of asynchronous interactional activities on different aspects of second or foreign language learning. In addition, the impacts of the teachers' online corrective feedback on different aspects of EFL learners' written discourse and the comparative efficacy of such online corrective feedback provided by the teachers or the peers might be especially illuminating. Finally, the study of the impacts of such online programs and flipped learning materials on the language learners' psychological variables, including attitude, motivation, language learning anxiety, etc., could provide the field with invaluable contributions.

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