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The Effects of EFL Learners' Attitudes on Participation and Learning During Collaborative Writing

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Abstract

Despite the proliferation of research about pair/group interaction during second language collaborative writing, little is known about how psychological factors, in particular learner attitude affect participation and learning in collaborative writing. This study primarily attempted to investigate whether EFL learners' attitudes toward collaborative writing influence their patterns of interaction and learning (reflected in languaging opportunities) during the writing process. To this end, pair talk was examined for the patterns of dyadic interaction and the quantity and quality of language-related episodes (LREs). Moreover, the study examined the texts produced using both quantitative and qualitative measures. The statistical analysis suggested that, compared with the pairs whose members held negative attitudes toward collaborative writing, the pairs with positive attitudes exhibited more collaborative patterns and generated substantially more LREs and more resolved LREs. As far as the outcome of pair work (i.e., collaborative writing) was concerned, the positive attitude pairs noticeably outperformed the negative attitude pairs on measures of fluency and accuracy. Also, they produced significantly better texts in terms of content, organization, grammar, and vocabulary. The study, therefore, sheds light on the ways that psychological factors can influence the collaborative writing process.

Keywords: EFL Learners' attitude, collaborative writing, language-related episodes (LREs), patterns of dyadic interaction, outcome of pair work

For a long time, second language writing instruction followed a product-oriented approach. Focusing totally on the written outcome, writing, according to this view, was mainly concerned with producing linguistically correct texts (Storch, 2013). A shift to a process-oriented approach during the last half of the 20th century, however, caused remarkable changes in instructional practices. The cognitive processes involved in the composition of a text suddenly gained crucial significance (Kroll et al., 2003). Emblematic of such a view toward writing and informed by Vygotsky's (1978) sociocultural theory of learning as a socially mediated activity,

collaborative writing emerged as an invaluable instructional task in L2 classrooms where two or more peers interacted to co-construct a written text (Storch, 2005; Wigglesworth & Storch, 2012).

Studies have shown numerous learning gains obtained through peer interaction during the writing process. Villarreal and Gil-Sarratea (2020), among others (e.g., Chen & Hapgood, 2021; Shehadeh, 2011), highlight that in comparison with individual writing, where learners can only draw on their own linguistic repertoires, collaborative writing activities provide learners with the opportunity to share their knowledge resources and hence to better accomplish tasks that are cognitively demanding. The collaboration process also encourages learners to negotiate form and meaning with their partners, a quality which has been long regarded as conducive to language learning (e.g., Brooks & Swain, 2009; Manegre & Gutiérrez-Colón, 2020; Storch, 2002, 2013, 2021). Others have further found that collaborative writing, if properly implemented, promotes the grammatical accuracy of the written product and improves learners' writing fluency (e.g., Bueno-Alastuey, et al., 2022; Elabdali, 2021; McDonough, et al., 2018; Mozaffari, 2017; Pham, 2021).

Despite the benefits often associated with collaboration, socioculturalists have repeatedly warned that mere pair/group interaction does not in itself guarantee learning opportunities. Clark and Clark (2008) highlight this point when they argue that it is "the kind of behaviors and relationships exhibited by the participants when working together to complete the task that determines the quality of the learning process" (p. 106). Accordingly, scholars have endeavoured to empirically explore the ways in which collaboration can facilitate learning. Several studies have investigated the various patterns of interaction in which learners engage while collaborating (e.g., Chen & Hapgood, 2021; Lesser, 2004; Mozaffari, 2017) as well as the learning opportunities that collaboration provides learners with (e.g., Kim & McDonough, 2008; Li & Zhu, 2017; Zhang, 2022).

While previous studies have identified and explored some of the key factors (e.g., L2 proficiency, task type, video-mediated environments, group formation method) which influence patterns of interaction and learning opportunities in collaborative writing (e.g., Alegría de la Colina & García Mayo, 2007; Hsu, 2022; Lesser, 2004; Mozaffari, 2017), little attention has been paid to the role that individual factors like learner attitude toward collaborative writing play in this regard. Learner attitudes are "their evaluations/judgments (either positive or negative) toward collaborative writing based on their perceptions" (Chen & Yu, 2019, p. 85). According to both theory and research, second/foreign language learners' attitudes strongly influence their learning because their attitudes toward an activity affect their motivation to contribute to and participate in the potential learning opportunities (e.g., Cook & Singleton, 2014; De Saint Leger & Storch, 2009; Li et al., 2022; Mercer, 2011; Storch, 2013). Prior research on learners' attitudes toward collaborative writing has mainly targeted learners' evaluation of collaborative writing experiences (Fernández-Dobao, 2020; Fernández-Dobao & Blum, 2013; Shehadeh, 2011). Therefore, as Chen and Hapgood (2021) emphasized, it is vital to examine the complicated relationships among learners' attitudes toward collaborative writing, their interaction patterns, and their learning during the collaborative writing process. Educators can then develop strategies that maximize learning opportunities during that process. The current study, hence, primarily examined whether EFL learners' attitudes toward collaborative writing affected their participation (i.e., patterns of interaction) and language learning opportunities during a collaborative writing process. The study further investigated

whether and to what extent learners' attitudes influence the outcome of pair work (i.e., the written production).

Literature review

Literature has convincingly demonstrated that peer-peer interaction per se does not guarantee learning opportunities (e.g. Chen & Hapgood, 2021; Chen & Yu, 2019; Mozaffari, 2017; Nelson, & Carson, 1998). The seminal work in this regard has been conducted by Storch (2002), who examined patterns of pair interaction in an adult ESL classroom. Adopting a qualitative approach, her study identified four major types of interaction patterns: collaborative, dominant/passive, dominant/dominant, and novice/expert. In the collaborative pattern, both pair members equally contribute to the activity and engage with each other's suggestions and ideas. In the dominant/dominant pattern, again, learners both equally participate in task completion, but they resist each other's contributions. In the dominant/passive pattern, one pair member takes control of the task, while the other rarely takes part. In the novice/expert pattern, the assumingly more knowledgeable pair member (i.e., the expert) encourages the assumingly less knowledgeable (i.e., the novice) to contribute to the task. More importantly, Storch's study indicated that the collaborative interaction pattern was highly conducive to opportunities for language learning.

Since then, a substantial body of research has attempted to explore the various variables which may influence learner participation and hence learning during collaborative writing so that proper pedagogical decisions can be taken to foster student learning. Following Storch (2001), researchers have mainly examined learner participation by analyzing patterns of interaction during the writing process and analyzed learning opportunities by studying language-related episodes (LREs), which relate to "any part of the dialogue in which students talk about the language they are producing, question their language use, or other-correct or self-correct" (Swain, 1998, p. 70). Overall, second language proficiency, task type, computer-mediated environments, group formation method, and learner psychological factors constitute the key variables that have captured researchers' attention (e.g., Abadikhah, 2011; Alegría de la Colina & García Mayo, 2007; García Mayo, 2002; Hsu, 2022; Lesser, 2004; Kim & McDonough, 2008; Mozaffari, 2017; Rahimi & Fathi, 2021; Storch & Aldosari, 2012; Watanabe & Swain, 2007).

Learner psychological factors are among the variables which have hitherto received scant attention. Adopting a mixed-method approach, Chen and Hapgood (2021) examined whether and how knowledge about collaborative writing influences learners' participation and learning during various stages of writing. The analysis of the pair talk, the reflective journals, and the post-task interviews revealed that those pairs who were provided with knowledge about collaborative writing generated significantly more collaborative patterns, more LREs, and more correctly resolved LREs. Chen and Ren's (2021) investigation of the issue in a Chinese context further found that L2 learners who were provided with some information about collaborative writing outperformed those who were not in terms of accuracy, fluency, and quality (i.e., content, organization, grammar, and vocabulary) of their collaboratively written texts.

Learner attitude is the second psychological factor studied so far. Most of the studies have addressed the attitude that L2 learners hold toward collaborative writing without exploring the actual impact that holding a particular attitude might have on learning opportunities and writing

outcomes (e.g., Abahussain, 2020; Doboa & Blum, 2013; Fernández-Dobao, 2020; Shehadeh, 2011; Zhai, 2021). Doboa and Blum (2013), for instance, investigated the issue among fifty-five intermediate-level learners of Spanish as a foreign language. The majority of the learners, according to the findings, believed that collaboration offers more opportunities for active participation and enhances the grammatical and lexical accuracy of their texts'. Furthermore, second language learners in Fernández-Dobao (2020) associated collaborative writing with language gains and the development of their writing skills. Similar findings were obtained by Abahussain (2020), who delved into the collaborative writing experience of L2 learners in Saudi Arabia.

Only one case study in ELT, to the best of our knowledge, expanded this line of research by examining the impact of learner attitude on the dynamics of collaborative writing. Chen and Yu (2019) investigated the extent to which the attitudes of two Chinese English learners changed during multiple collaborative writing tasks and the ways in which attitudes influenced patterns of interaction and language learning opportunities. Variations in the two learners' attitudes, as the findings showed, resulted in significant differences in patterns of dyadic interaction and LRE production. For example, as Chen's (one of the cases) attitude toward collaborative writing changed from unfavorable to very favorable, his interaction pattern changed from dominant to collaborative. Nonetheless, the case study, as the authors emphasized, provided only preliminary empirical evidence on how learners' attitudes affect patterns of interaction and language learning opportunities in collaborative writing, and future research needs to examine "the relationship between learners' attitudes alongside a quantitative scoring of their jointly written texts (p. 94)". To fill this gap and given the fact that theoretical evidence highlights the positive effects of learner attitude on their motivation to contribute to and participate in potential learning opportunities (e.g., Cook & Singleton, 2014; Li et al., 2022; Storch, 2013), the study aimed to extend Chen and Yu's study by including a quantitative analysis of the texts that a more significant number of learners wrote collaboratively. In other words, the present study addressed the following questions:

1. Do EFL learners' attitudes toward collaborative writing influence the quantity and quality of LREs produced?

2. Do EFL learners' attitudes toward collaborative writing influence the patterns of dyadic interaction?

3. Do EFL learners' attitudes toward collaborative writing influence the fluency, accuracy, and complexity of the written texts produced?

4. Do EFL learners' attitudes toward collaborative writing influence the quality of the written texts produced?

Method

Participants

Forty English language learners participated in this study, which was conducted during the second half of the winter semester of 2019. They were recruited from three parallel EFL classes at an English language institute in Iran. The EFL learners were all female, and their ages ranged from 19 to 25. They were at the intermediate level of proficiency based on the Oxford Placement Test (Allan, 2004) used by the institute. The ability to communicate orally and in writing in English is the main goal that EFL learners in Iran pursue, and foreign language

institutes endeavor to help learners in this regard. The three classes, taught by the same teacher, were held twice a week (each lasting 2 hours), and writing constituted one of the four skills that the course dealt with. One-third of the first half of the semester was devoted to writing (i.e., four sessions). The writing activities the learners usually did during these sessions, as the teacher confirmed, were collaborative (either pair or group work). The learners were introduced to the concept of collaborative writing and its strategies and procedures at the beginning of the course and did a collaborative writing task in each session. All the learners, hence, had had the experience of doing four collaborative writing tasks in the classroom, instructed by the same teacher, before the study began. In addition to obtaining informed consent from individual participants (all the learners of the three classes expressed willingness to cooperate in the study), the participants and the institute manager were informed about the overall purpose of the study and were assured that their anonymity would be fully preserved. To protect the participants' anonymity, pseudonyms (typical women's names but not the learners' real names) were used. The participants were further informed that they could withdraw from the study anytime.

Instruments

The study primarily attempted to investigate whether EFL learners' attitude toward collaborative writing affects the patterns of interaction, the quantity and resolution of LREs produced during the writing process, and the quality of the written products. The study, hence, initially examined the attitudes that the participant EFL learners held toward collaborative writing. To this end, we adapted Fernández-Dobao's (2012) questionnaire, which focused on learner beliefs concerning collaborative writing. The questionnaire was administered in English, but the participants were allowed to give their reasons for their views in English or L1. In particular, the first two questions addressed learners' overall attitudes toward collaborative writing. The following questions focused on the collaborative writing tasks they did during the first half of the semester. First, they were asked about their general impressions of the activities and the nature of the collaborative tasks they did with their peers. They were further asked to indicate whether they preferred to complete the writing tasks in pairs, small groups, or individually and to justify their answers.

The following three questions asked learners about the impact of collaboration on the quality of the texts they jointly wrote (6-8). The last two questions sought learners' attitudes toward the potential values of collaborative writing for expanding their linguistic knowledge (in particular, grammar and vocabulary knowledge) (9-10). It needs to be emphasized here that the study addressed the overall attitudes of the EFL learners toward collaborative writing at the time of conducting this study and that the reasons for holding a particular attitude, although an important educational concern, were not related to the purpose of the present investigation.

In addition to the questionnaire, digital audio recorders were employed to record the pair talk that was transcribed, by the researcher, for analyzing the LREs and patterns of dyadic interaction.

Data Collection Procedure

The data collection lasted five weeks, starting from the second half of the winter semester 2019. The data included the audio recordings of pair talk and the collaboratively written texts. Table 1 displays the timeframe of the data collection.

Table 1. Data collection timeframe.

Stage 1 Week 1/2	**Stage 2** Week 3/4	**Stage 3** Week 5
The first round of participant recruitment/examining learners' attitudes	The second round of participant recruitment/Pair formation	Collaborative writing task

Stage one: In week one of the study (the second half of the winter semester), the learners' attitudes toward collaborative writing were measured. In order to increase the possibility that the researcher would come up with a satisfactory number of learners of both positive and negative attitude, EFL learners from two parallel classes were initially invited to the study. The attitude questionnaire was administered to the 46 learners who agreed to participate and they were given one week to fill it out. Forty-one of the questionnaires (class 1 = 20, Class 2 = 21) were returned the following week. Table 2 shows the responses to the multiple choice part of the questions, which were then justified by the respondents. As to the classification of the pairs, those who responded "Not helpful" to the first two questions were classified as holding negative attitudes, and those who responded either "Helpful," "Very helpful," or "Extremely helpful" as having positive attitudes toward collaborative writing. Given the type of the first two questions and the possible responses, the participants in the current study could express either a positive or a negative attitude toward collaborative writing.

The analysis of the responses, as shown in Table 2, revealed that 29 of these learners (class 1 = 17, class 2 = 12) expressed a positive attitude toward collaborative writing (either pair or group work), believing that collaboration provides them with a greater variety of ideas to create content, larger lexical and grammatical resources to draw upon, and helps their vocabulary and grammar development. For example, one learner commented, "When we were writing about internet use, we had differing ideas. So, we used our opposing views to write more sophisticated content." Another one explained, "I like the collaborative activities we do in the classroom because we can use the vocabulary knowledge of our pair members to write better texts." Twelve learners (class 1 = 3, class 2 = 9), on the contrary, expressed a negative attitude, mainly reporting that peers have similar levels of language knowledge, hence cannot help each other write better texts or develop vocabulary and grammar knowledge. One learner, for instance, justified her disagreement with collaborative writing in this way, "The learners in our class are all intermediate. So, we cannot help each other write better texts."

Stage Two: To achieve the purpose of the study, we aimed to compare at least 10 positive-positive and 10 negative-negative attitude pairs. Since the majority of the examined learners were positive toward collaborative writing, in week three, learners from another parallel class (N = 19) were examined for their attitudes. The results of the learners' questionnaire responses (received in the following week) are displayed in Table 2. It needs to be noted that the table only reports the results concerning the multiple-choice part of the questions. Each question included a "Why?" part whose responses were briefly explained in the previous paragraph. This left us with 60 EFL learners (Class 1 = 20, Class 2 = 21, Class 3 = 19), with 38 individuals (Class 1 = 17, Class 2 = 12, Class 3 = 9) who expressed positive attitudes toward collaborative writing, and 22 (Class 1 = 3, Class 2 = 9, Class 3 = 10) who reported negative attitudes. Eleven negative-negative and 19 positive-positive pairs could hence be formed by these learners. Since the task was completed in the second half of the semester, the learners in each class were familiar with each other and used to working together in pairs/groups. Since familiar pairs are

believed to work more effectively (Pastushenkov, et al., 2021; Poteau, 2017), given the effect of familiarity on learners' willingness to communicate, care was taken to form each pair by the learners of the same class having the experience of working together (i.e., familiar learners). In other words, following Pastushenkov, et al. (2021), participants who reported, when the teacher asked them orally, "I do not know this person and we have never worked together before" or "I know this person, but we have never worked together before" were considered unfamiliar learners and those who mentioned "I know this person well and we often work together" or "We are friends outside class and we often work together" were regarded as familiar (p. 5). This left us with ten familiar positive-positive and ten familiar negative-negative attitude pairs: Class 1: one negative-negative attitude pair, four positive-positive attitude pairs; Class 2: four negative-negative attitude pairs, three positive-positive attitude pairs; Class 3: five negative-negative attitude pairs, three positive-positive attitude pairs. It needs to be mentioned here that the remaining learners who were not used in the study continued their learning in other similar classes.

Table 2. Learners' attitude toward collaborative writing.

Learner attitude		Class 1 (N = 20)	Class 2 (N = 21)	Class 3 (N = 19)
1. How helpful do you think it is to write in pairs in class?	Not helpful	3	9	10
	Helpful	12	9	6
	Very helpful	3	1	1
	Extremely helpful	2	2	2
2. How helpful do you think it is to write in groups in class?	Not helpful	3	9	10
	Helpful	13	8	5
	Very helpful	1	0	2
	Extremely helpful	3	4	2
3. Writing tasks can be done collaboratively in pairs, groups, or individually. Which one do you prefer?	Collaboratively	17	12	9
	Individually	3	9	10
4. If you had written the text individually, how do you think its content would have been?	Better	3	9	7
	The same	0	2	3
	Worse	17	10	9
5. If you had written the text individually, how do you think its vocabulary would have been?	Better	2	9	9
	The same	1	0	1
	Worse	17	12	9
6. If you had written the text individually, how do you think its grammar would have been?	Better	3	8	10
	The same	2	3	2
	Worse	15	10	7
7. How helpful do you think these collaborative writing tasks were for improving your vocabulary knowledge?	Better	17	9	9
	The same	3	3	2
	Worse	0	9	8
8. How helpful do you think these collaborative writing tasks were for improving your grammar knowledge?	Better	15	11	9
	The same	5	2	3
	Worse	1	8	7

Stage Three: The collaborative writing task took place in week five. Prior to the task, the learners received a 30-minute instruction focused on problem-solution signal words and text structure. After receiving the instruction, the 20 pairs were given approximately 45 minutes to write, by hand, a short composition of a problem-solution type on either of these topics: "The impacts of excessive internet use on various aspects of student life" *or* "The impacts of smoking on various aspects of student life" (see Appendix A). In addition to using the writings for the

research purpose, the learners were provided with feedback on both the form and content of their writings, as the normal procedure for collaborative writing tasks done in these classes in the institute.

Data Analysis

The data for this study included the audio recordings of the pair talk and the jointly written texts. The following paragraphs explain how these data sources were analyzed to answer the research questions.

Language-related episodes (LREs)

The pair talk was analyzed for LREs. LREs, as mentioned earlier, refer to "any part of the dialogue in which students talk about the language they are producing, question their language use, or other-correct or self-correct" (Swain, 1998, p. 70). Following Storch and Aldosari (2012), LREs were assigned into form-based, lexis-based, and mechanics-based categories. The instances of language which concerned grammatical form were coded as F-LRE, those dealing with lexical choice as L-LRE, and those pertaining to punctuation and spelling (i.e., mechanics) as M-LRE. Finally, drawing on the work of Leeser (2004), LREs were categorized for the quality of their resolution into (1) correctly resolved, (2) incorrectly resolved, or (3) unresolved. The following three examples illustrate how the type of LREs and the quality of resolution were determined. It needs to be noted here that the learners sometimes used their L1 to talk about different issues related to the task. Those parts were, hence, translated into English. There was no instruction in this respect. The learners drew on their English knowledge to talk with each other during the tasks.

Excerpt 4 below concerns a discussion over word choice. Here, Nafas suggests an alternative verb, Negar thinks over her suggestion, Nafas then gives her reason. Finally, Negar takes the suggestion and incorporates it into the written text. Given the lexical adequacy of the suggested verb, this lexis-based episode was correctly resolved.

> Excerpt 4: A correctly resolved L-LRE
>
> Negar: Several students are used to searching through the internet although they don't have any particular purpose. Research has pointed out several disadvantages of such habits.
>
> Nafas: I see. In fact research has indicated ...
>
> Negar: Pardon? indicate?
>
> Nafas: Yeah…Um…It's actually a more formal word for "pointing out".
>
> Negar: I see…So, that's better. Research has indicated several disadvantages of such habits.

In excerpt 5, the LRE deals with mechanics, in this case spelling. Here, Motahareh doubts the correct spelling of the noun "concentration". Using an inappropriate analogy (comparing the word "concentration" with "conservation"), Elaheh assures her partner that the word should be written with an "S'. Therefore, although the episode was resolved, the solution was incorrect.

> Excerpt 5: An incorrectly resolved M-LRE

Motahareh: These students usually lose their concentration… By the way, concentration is by "s" or "C"?

Elaheh: Um…With "S." It's like "conservation"…

Motahareh: Ok. Thanks.

The following provides a clear example of a form-focused LRE. Mahboubeh and Sara are arguing over the correct past participle form of "overcome". Sara criticizes Mahboubeh for using an incorrect verb form and in turn, offers her an alternative. Mahboubeh, however, resists her suggestion and the episode is left unresolved.

Excerpt 6: An unresolved F-LRE.

Mahboubeh: The problems that smoking brings to students cannot be easily overcomed.

Sara: Um…I know. It's terrible. But, the past participle of overcome is overcome. There should be no "ed" at the end.

Mahboubeh: But, as far as I know, it is overcomed…

Sara: Um…I'm not sure yet.

After identifying and categorizing the LREs, t-tests were used to determine if there existed any significant differences between the positive attitude and negative attitude pairs in the quantity and quality of LREs produced during the writing process.

To ensure reliability in coding, the researcher further calculated inter-rater reliability. To this end, two raters working independently – the researcher and an experienced EFL teacher who had been teaching L2 writing for almost ten years – coded 10 randomly selected pair talk transcripts for patterns of interaction and LREs. The inter-rater agreement for interaction patterns was 92% and for the LREs was 97.3%. Then, we used the relevant coding schemes and reconsidered those instances of data on which disagreements arose. Finally, we reached a consensus regarding all the codes in the randomly selected pair talk transcripts.

Patterns of dyadic interaction

The transcribed pair talk was initially analyzed for patterns of interaction. To this end, the study utilized Storch's (2002) four patterns of interaction – collaborative, expert/novice, dominant/dominant, and dominant/passive – which are characterized by Damon and Phelps's (1989) notions of equality and mutuality. Equality deals with "the degree of control or authority over a task", and mutuality concerns "the level of engagement with each other's contribution" (Storch, 2002, p. 127). Following similar prior studies (Mozaffari, 2017), each transcript of the pair talk was assigned the pattern which was present in at least 75% of the episodes. Below, we provide an example for each of the three patterns that emerged in the data: collaborative, dominant/passive, and dominant/dominant.

Excerpt 1 contains a collaborative relationship between Maryam and Mona who are discussing the impacts of internet use on students' physical and psychological conditions. As this episode shows, both members are equally contributing to the discussion (i.e., high equality). They further agree with and build on each other's ideas, which represents the characteristic of mutuality.

Excerpt 1: Collaborative.

Mona: Using too much internet is for sure harmful for every person.

Maryam: Exactly, it's not just limited to students.

Mona: Yeah…First and for most it harms our eyes. The light from the surface of the mobile phone…. or any other device is harmful.

Maryam: Too harmful… And it's not just our body. When somebody such as a student spends a lot of time on the internet, they become really addicted.

Mona. Um…Yeah…That's a real catastrophe for a student.

Maryam: So… We write about both physical and psychological harms of internet use.

In Excerpt 2, Maryam and Nazanin demonstrated a dominant/passive pattern. Nazanin dominates the discussion about the effects of smoking on students' life, whereas Maryam contributes a little. Maryam expresses only three words to show her agreement with Nazanin's ideas. Moreover, Nazanin displays no attempt at engaging Maryam in task completion. The episode, hence, indicates little sign of equality and mutuality.

Excerpt 2: Dominant/passive.

Maryam: I think smoking mostly influences students' mental health.

Nazanin: Sure.

Maryam: I've seen some students who are really addicted and have lost concentration on their learning.

Nazanin: Um…Exactly.

Maryam: Some even quit school…because they no longer see any values in studying.

Nazanin: Yeah.

The following excerpt further represents a dominant/dominant type of interaction where pair members are disputing the choice of a lexical item. Although both learners are contributing to the task, each one insists on her suggestion. The interaction, therefore, enjoys high equality but no mutuality, which characterizes a dominant/dominant pattern.

Excerpt 3: Dominant/dominant.

Nazi: Body harms of smoking are really terrible.

Dorsa: What? Body harms? You mean? You mean physical harms?

Nazi: Yeah. Of course. There is no difference between them. Both have the same meaning.

Dorsa: Um…But… It's not just a matter of meaning. The form doesn't seem correct.

Nazi: How do you know?

Dorsa: It's quite clear. We have physical versus psychological.

Nazi: But, body harm is the same as physical harm.

Dorsa: No way. I can't accept it.

Writings

The jointly written texts were analyzed both quantitatively and qualitatively. Quantitative analysis included three measures of fluency, accuracy, and complexity. Wigglesworth and Storch (2009) were used to operationalize the constructs of fluency, accuracy, and complexity. Following their work, fluency was assessed using the average number of words, T-units, and clauses per text, and accuracy was examined based on the number of error-free T-units and error-free clauses. Errors in the present study concerned word choice, verb tense, subject-verb agreement, and the use of articles, pronouns, and prepositions. Regarding complexity, two measures were employed: the proportion of dependent clauses to all clauses and the proportion of clauses to T-units (Wigglesworth & Storch, 2009). Since the three measures, used for the analysis of the texts were sufficiently distinct, a series of one-way ANOVAs were conducted to examine how learner attitude might have influenced the written products. In addition, the texts were analysed qualitatively. Drawing on Shehadeh (2011), we used a writing scale originally developed by Jacobs et al. (1981) and adapted by Hedgcock and Lefkowitz (1992) to assess the writings. The rubric measures five categories of writing, namely content, organization, grammar, vocabulary, and mechanics, based on a zero to 100-point scale (see Appendix B).

To examine reliability in scoring, two individual raters (the researcher and an EFL teacher) evaluated all the writings based on the rubric. Both raters were working towards a Ph.D. degree in foreign language education and had taught English for more than five years. Cronbach's alpha was employed to calculate inter-rater consistency. The correlation coefficient for scores given by the two raters was 0.80. According to the guidelines of Brown, Glasswell, and Harland (2004), a reliability index of 0.70 is sufficient for structured rubrics. After the texts were analyzed using the rubric, MANOVA was used to investigate the impact of learner attitude on the quality of the jointly written texts.

Results

RQ1. Do EFL learners' attitudes toward collaborative writing influence the quantity and quality of LREs produced?

Table 3 presents the number, type, and resolution of LREs produced in the positive and negative attitude pairs. With regard to the quantity of LREs, there existed a large difference between the two groups. In the pairs with positive attitudes a total of 232 episodes were generated, while in the pairs with negative attitudes, only 171 episodes were produced. In terms of the type, however, more similarities were revealed in the data. L-LREs dominated both groups, followed by F-LRE and M-LRE. The learners in the positive attitude pairs generated 152 L-LREs (65.5% of the total), 70 F-LREs (30.1% of the total), and 10 M-LREs (4.3% of the total), and the learners in the negative attitude pairs generated 120 L-LREs (70.1% of the total), 43 F-LREs (25.1% of the total), and 8 M-LREs (4.6% of the total). The results further revealed large differences in the percentage of correctly resolved LRES between the positive and negative attitude pairs. There were 201 LREs (86.6% of the total) resolved correctly among the positive attitude pairs, and only 41 LREs (23.9% of the total) resolved correctly among the negative attitude pairs.

Table 3. Number, type, and quality of LREs

Attitude	L-LREs	F-LREs	M-LREs	Total LREs	Correctly resolved LREs (percentage of total)
Positive attitude Pairs	152	70	10	232	201 (86.6%)
Negative attitude pairs	120	43	8	171	41 (23.9%)

Table 4 displays the number and type of incorrectly resolved and unresolved episodes among the two paring conditions. Out of the 31 remaining episodes which were not resolved successfully by the positive attitude pairs, 26 episodes (83.8%) were incorrectly resolved and 5 (16.1%) were left unresolved. Importantly, 24 (92.3%) of the incorrectly resolved and 4 (80%) of the unresolved episodes concerned form-focused issues, suggesting that the learners in this group were capable of resolving the majority of their lexis-related concerns. A different result was found for the negative attitude pairs. Of the 130 episodes which were not resolved successfully, 28 of the episodes (21.5%) were incorrectly resolved, while 102 (78.4%) remained unresolved. The amounts of incorrect episodes were almost equal between the form-focused (15) and lexis-focused (13) episodes. As to the unresolved episodes, however, the largest proportion related to lexical issues (72) rather than formal ones (28). If we look at the total number of produced F-LREs and L-LREs, we find that the learners in this group did not resolve any of their concerns over form-related issues (i.e., 43 out of the total 43 F-LREs were either unresolved or incorrectly resolved) and did not solve most of their lexis-related problems (i.e., 85 out of the total 120 L-LREs were either unresolved or incorrectly resolved).

Table 4. Number and type of incorrectly resolved and unresolved LREs

Attitude	LREs	L-LREs	F-LREs	M-LREs	Total LREs
Positive attitude pairs	Incorrectly resolved	1	24	1	26
	Unresolved	1	4	0	5
Negative attitude pairs	Incorrectly resolved	13	15	0	28
	Unresolved	72	28	2	102

Table 5 further shows the result of the t-test. The difference in the quantity of LREs produced between the two pairs was statistically significant ($F = 8.8$, $p = 0.000$). This finding suggests that the pairs who were positive toward collaborative writing produced a statistically larger quantity of LREs than those who were negative in this regard.

Table 5. T-test comparing number of LREs between positive and negative attitude pairs.

Source	Learner attitude	N	M	SD	F	Sig (2-tailed)	d*
LRE	Positive attitude pairs	10	23.2	3.7	8.8	.000	0.12
	Negative attitude pairs	10	17.1	2.2			

*d = Cohen's d (effect size)

As far as the quality of correctly resolved LREs was concerned, the same result was achieved. The number of episodes that were resolved correctly, as presented in table 6, was significantly larger in the positive attitude pairs than in the negative attitude pairs, with Cohen's d showing

a large effect size. The findings, overall, suggest learner attitude toward collaborative writing significantly affects both the quantity and the quality of LREs.

Table 6. T-test comparing number of LREs correctly resolved in positive and negative attitude pairs.

Source	Learner attitude	N	M	SD	F	Sig (2-tailed)	d*
Correctly Resolved LRE	Positive attitude pairs	10	20.1	4.95	6.56	.000	0.13
	Negative attitude pairs	10	4.1	1.31			

*d = Cohen's d (effect size)

RQ2. Do EFL learners' attitudes toward collaborative writing influence the pattern of dyadic interaction?

Table 7 displays the interaction patterns that were found among the pairs who had positive and negative attitudes toward collaborative writing. The predominant pattern of interaction, as Table 7 shows, differed substantially between these types of pairs. Seven of the pairs from the positive attitude group were found to have collaborative interaction (70% of the pairs), while six of the pairs from the negative attitude group demonstrated a dominant/dominant pattern (60% of the pairs). The remaining three positive attitude pairs exhibited either a dominant/dominant (20%) or a dominant/passive (10%) pattern. Among the negative attitude pairs, however, only two pairs showed a collaborative pattern. These data show that the majority of those pairs who expressed a positive attitude toward collaborative writing were collaborative during the interaction, while most of those who had negative attitude interacted in a dominant/dominant pattern.

Table 7. Patterns of dyadic interaction.

Positive attitude pairs	Patterns of interaction	Negative attitude pairs	Patterns of interaction
Maryam & Nazanin	Dominant/Dominant	Nazi & Dorsa	Dominant/Dominant
Zahra & Darya	Dominant/Dominant	Mahboubeh & Sara	Dominant/Dominant
Dena & Hoda	Dominant/Passive	Narjes & Noora	Dominant/Dominant
Maryam & Nesa	Collaborative	Maedeh & Nahid	Dominant/Dominant
Zeinab & Pooneh	Collaborative	Marjan & Azadeh	Dominant/Dominant
Nasrin & Atefeh	Collaborative	Fatemeh & Dana	Dominant/Dominant
Nasim & Diba	Collaborative	Neda & Mohadeceh	Dominant/Passive
Hanieh & Sara	Collaborative	Motahareh & Elaheh	Dominant/Passive
Maryam & Mona	Collaborative	Elina & Hamideh	Collaborative
Mahdieh & Soheila	Collaborative	Negar & Nafas	Collaborative

RQ3. Do EFL learners' attitudes toward collaborative writing influence the fluency, accuracy, and complexity of the written texts produced?

To answer this question, three aspects of language use were examined to see how the positive and negative attitude pairs performed the writing task. As seen in Table 8, the positive attitude pairs showed higher means regarding all the measures of fluency (the average number of words, T-units high clauses per text). The results of one-way ANOVA further indicated that the difference between the negative and positive attitude pairs was statistically significant. Thus, the pairs with positive attitude generated more fluent texts than the negative attitude pairs. A similar finding was obtained as to the two measures of accuracy, namely error-free T-units and error free clauses. Table 9 displays that the positive attitude pairs significantly outperformed the negative attitude pairs on both measures of accuracy, with medium- to large-effect sizes. Nonetheless, a different picture was observed with regard to complexity. Results, presented in Table 10, demonstrated no significant difference between the two types of pair as to the complexity measures. Overall, these findings suggest that positive attitude pairs produced more accurate and fluent texts than the negative attitude ones.

Table 8. One-way ANOVA for measures of fluency.

Source	Learner attitude	N	Sum	Mean	SD	F	Sig.	η^{2*}
Average words per text	Positive attitude pairs	10	1750	175.0	4.78	10.43	.005	0.13
	Negative attitude pairs	10	1689	168.9	5.43			
Average T-units per text	Positive attitude pairs	10	125	12.51	1.37	6.34	.04	0.09
	Negative attitude pairs	10	111	11.1	1.78			
Average clauses per text	Positive attitude pairs	10	232	23.2	1.86	7.45	.04	0.08
	Negative attitude pairs	10	156	15.6	1.98			

* η^2 = eta squared (effect size)

Table 9. One-way ANOVA for measures of accuracy.

Source	Learner attitude	N	Sum	Mean	SD	F	Sig.	η^{2*}
Error free T-units	Positive attitude pairs	10	71	7.1	1.20	10.88	.002	0.11
	Negative attitude pairs	10	54	5.4	1.37			
Error free clauses	Positive attitude pairs	10	178	17.8	1.45	9.01	.009	0.10
	Negative attitude pairs	10	156	15.6	1.98			

* η^2 = eta squared (effect size)

Table 10. One-way ANOVA for measures of complexity.

Source	Learner attitude	N	Mean	SD	F	Sig.
Clauses per T-unit	Positive attitude pairs	10	3.2	.912	1.04	.34
	Negative attitude pairs	10	2.4	.727		
Dependent clause percentage	Positive attitude pairs	10	39.2	5.12	1.78	.84
	Negative attitude pairs	10	38.1	5.86		

RQ4. Do EFL learners' attitudes toward collaborative writing influence the quality of the texts produced?

The texts were analysed based on a rubric to examine the quality of the writings that the positive and negative attitude pairs produced (see Appendix B). The results of MANOVA (as shown in Table 11) indicated that the positive attitude pairs significantly outperformed the negative

attitude ones in terms of content, organization, grammar and vocabulary, with medium to large effect sizes. This demonstrates that the positive attitude pairs wrote texts of higher quality.

Table 11. MANOVA for quality of writing.

Source	Learner attitude	N	Mean	SD	F	Sig.	η^{2*}
Content	Positive attitude pairs	10	25.5	.65	3.7	.050	.07
	Negative attitude pairs	10	23.6	.98			
Organization	Positive attitude pairs	10	14.3	1.2	5.1	.04	0.08
	Negative attitude pairs	10	12.5	1.9			
Grammar	Positive attitude pairs	10	22.6	1.5	10.3	.002	0.15
	Negative attitude pairs	10	19.5	.86			
Vocabulary	Positive attitude pairs	10	17.3	.71	18.5	.000	0.18
	Negative attitude pairs	10	15.4	.58			
Mechanics	Positive attitude pairs	10	5.1	.71	1.9	.18	
	Negative attitude pairs	10	4.7	.76			

* η^2 = eta squared (effect size)

Discussion

The purpose of the current study was to investigate whether learners' attitude toward collaborative writing is correlated with the language learning opportunities (as reflected in the quantity and quality of LREs), the patterns of dyadic interaction, and the outcome of pair work.

Although prior research (e.g., Chen & Hapgood, 2021; Alegría de la Colina, & García Mayo, 2007; Mozaffari, 2017; Niu, Jiang, & Deng, 2018) suggested that L2 proficiency, task type, grouping method, and metacognitive knowledge about collaborative writing influence both patterns of interaction and the number and resolution of LREs, this study demonstrated that familiar learners of the same gender, with similar L2 proficiency, and doing the same activities in parallel classes instructed by the same teacher interact differently when the pairs have different attitudes toward collaborative writing. In line with Chen and Yu's (2019) case study of two Chinese EFL learners, the Iranian EFL learners with positive attitudes toward collaborative writing generated substantially more LREs, resolved more LREs, and exhibited substantially more collaborative patterns of interaction than the learners with negative attitudes. This finding expands our understanding of participation and learning during collaborative writing by examining a significant psychological factor, that is, learner attitude. Given that in some EFL contexts classrooms are virtually the only place where learners are provided with opportunities for learning and the fact that LREs have been believed to represent L2 learning in progress (e.g., Basturkmen, Loewen, & Ellis, 2002; Gass, & Mackey, 2015; Loewen, 2004; Mackey, 2012; Martínez-Adrián & Gallardo-del-Puerto, 2021; Swain & Watanabe, 2013), or even L2 development (e.g.,Alegría de la Colina, & García Mayo, 2007; Swain, 1998; Williams, 2001; Zabihi, 2022), the generation of substantially more LREs among pairs with positive attitudes suggests that learners with positive attitudes to collaboration benefited more from working together. It should be noted, however, that both attitudes to working with other people and success in such work might be linked to some other affective factor(s), such as empathy towards others or extrovert/introvert personality. These factors were not considered in the current study, and hence need further investigation.

As far as the type of language-related episodes (LREs) was concerned, there are two points worth mentioning. First, the results revealed that the lexical and grammatical LREs substantially outnumbered the mechanical ones. In other words, in both positive and negative attitude pairs only less than 5 percent of the language deliberations related to mechanics. This finding, which is in line with previous research (e.g., Fernandez-Dobao, 2012; Mozaffari, 2017; Wigglesworth & Storch, 2009), suggests that although in collaborative writing many of the decisions about grammatical and lexical choices are made jointly, the decisions regarding mechanics (i.e., spelling, punctuation, etc.) fall on the single individual who writes the final text. This corroborates Keck et al.'s (2006) conclusion that peer interaction specifically benefits lexis and morphosyntax, and further lends support to Long's (1996, p. 414) assertion that "feedback obtained through negotiation work or elsewhere may be facilitative of L2 development, at least for vocabulary, morphology, and language-specific syntax".

Second, the quantity and type of correctly resolved, incorrectly resolved, and unresolved episodes among the positive attitude pairs demonstrated that these learners were far better able to solve their lexical problems than their formal ones. The learners, in other words, managed to successfully resolve almost all of the lexis-related episodes produced. Finding the same result, previous studies (e.g., Fernández-Dobao, 2014; Kim, 2008) concluded that collaboration during the writing process particularly benefits the development of L2 vocabulary. Given the substantially large amount of correctly resolved L-LREs among the positive attitude pairs and the extremely small number of resolved lexical episodes among the negative attitude pairs, the current study supports prior research, showing that EFL learners' attitude mediates the impact of collaboration on L2 vocabulary development.

As to the outcome of pair work, the jointly produced texts underwent both quantitative and qualitative analysis. The examination of the written productions revealed that the positive attitude pairs significantly outperformed the negative attitude ones in terms of fluency and accuracy, but not complexity. Regarding the quality of writing, the findings moreover indicated that the positive attitude pairs wrote texts of significantly better quality in relation to content, organization, grammar, and vocabulary. These findings, along with Basterrechea and García Mayo (2013), Fernández-Dobao (2012), and Mozaffari (2017), might suggest that it was the greater focus on language use among the positive attitude pairs (as they produced a substantially larger number of correctly resolved LREs) which contributed to the production of more accurate and better texts. The study in fact furthered Chen and Yu's (2019) case study demonstrating that in addition to affecting patterns of interaction and learning opportunities, learners' attitudes toward collaborative writing positively influence the quality of the collaboratively written text.

It should to be noted that the participants in the current study were all at the same proficiency level (i.e., intermediate). Unlike Storch and Aldosari's (2012) and Mozaffari's (2017) conclusions that learners who share similar L2 proficiency largely exhibit a collaborative relationship, the intermediate EFL learners in the present study varied substantially in terms of their participation. As mentioned earlier, only the pairs whose members held a positive attitude toward collaborative writing interacted collaboratively. The other intermediate learners with negative attitudes mostly showed a dominant/dominant interaction. This finding highlights the significant role that learner psychological factors and in this case learner attitude may play in the way learners participate in interactive tasks. When pairing learners, hence, it seems crucial

for teachers to consider, among several other issues, the attitudes that learners hold as to the activity at hand.

It may be that if before experiencing collaborative work learners are provided with information about how working in pairs may benefit them, they might enter the task with a more positive attitude which, in turn, might affect their participation and learning opportunities. Or perhaps the learners with negative attitudes toward collaborative tasks should be asked to work individually, or perhaps they should write individual texts and get feedback from peers rather than producing a single text working together. Prior evidence has shown that whether learners believe in the potential of an activity for learning is likely to influence their participation and learning in an activity (e.g., Chen and Yu, 2019; Li, Hiver & Papi, 2022; Storch, 2013; Storch & Wigglesworth, 2010; Wigfield et al. , 2011). Overall, the findings, in line with prior research (e.g., Chen & Hapgood, 2021; Mozaffari, 2017), develop our knowledge that merely engaging in collaborative writing does not guarantee collaborative interaction. More than three-fourths of the learner participants who expressed a negative attitude interacted in non-collaborative ways and could not successfully resolve the language-related episodes produced. It seems that giving an introduction to collaborative learning to see if this would induce a positive attitude to it in advance of trying it would be a useful area of research.

This study achieved its purpose by examining pairs whose members held similar attitudes toward collaborative writing (i.e., negative-negative and positive-positive attitude pairs). Although the findings were quite revealing, it would also be helpful if further studies look into pairs with mixed attitudes (i.e., positive-negative attitude pairs). It should be also noted here that the learners in this study only constituted female EFL learners. Given that learner gender has been found to affect the occurrence and resolution of language-related episodes (LREs) in some prior research (e.g., Azkarai, 2015; Ross-Feldman, 2007), further studies might be conducted to explore whether gender can meditate the impact of learner attitude on participation and learning opportunities. Azkarai (2015), for instance, demonstrated that when males are grouped with female learners they use L1 substantially more than when they are grouped with males. An investigation into causality in the relationship between a positive attitude and successful collaborative writing would be also so informative. It would be similarly helpful to look at individual learning resulting from collaborative writing. The study showed that pairs with successful collaboration produced texts that were better than those from pairs that did not interact fruitfully. However, it did not examine whether the individual learners involved acquired greater writing proficiency as a result of their successful interactions.

Despite these limitations, the findings of the current study yielded useful insights for classroom teachers. Since L2 learners enter classrooms with different attitudes toward collaborative writing (e.g., Chen & Hapgood, 2021; Fernández-Dobao & Blum, 2013; Storch, 2005; Vorobel, & Kim, 2017), before embarking on any such tasks, it behooves L2 teachers, as Storch (2013) highlighted, to explore the kind of attitude that learners hold regarding collaborative writing. Short questionnaires, according to the available research (e.g., Fernández-Dobao & Blum, 2013), can serve as a useful strategy to elicit students' attitudes in this respect. Sufficient and well-planned training, Storch further argued, should be then provided to the learners, particularly to those holding negative attitudes, about the potential ways in which collaboration during the writing process may benefit them. This may, in turn, enhance their motivation to participate collaboratively in the task which is particularly significant given that collaborative

interaction, according to several previous studies, is conducive to more learning opportunities (e.g., Chen, & Hapgood, 2021, Lesser, 2004; Storch, 2002; 2013; Watanabe, & Swain, 2007).

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Appendix A: Collaborative writing task.

Write at least 3-4 paragraphs about one of the following topics (i.e. discuss how one of the following issues is currently influencing Iranian students and suggest some possible solutions; there is no limit on the number of words).

1. The impacts of excessive internet use on various aspects of student life
2. The impacts of smoking on various aspects of student life

Appendix B: Foreign language composition profile by Hedgcock and Lefkowitz (1992).

Score Criteria	
Content	
27-30	Excellent to very good: knowledgeable; substantive, thorough development of thesis; relevant to topic assigned
22-26	Good to average: some knowledge of subject; adequate range; limited thematic development; mostly relevant to topic, but lacks detail
17-21	Fair to poor: limited knowledge of subject; minimal substance; poor thematic development
13-16	Very poor: shows little or no knowledge of subject; inadequate quantity; not relevant, or not enough to rate
Organization	
18–20	Excellent to very good: fluent expression; clear statement of ideas; solid support clear organization; logical and cohesive sequencing
14–17	Good to average: adequate fluency; main ideas clear but loosely organized; supporting material limited; sequencing logical but incomplete
10–13	Fair to poor: low fluency; ideas not well connected; logical sequencing and development lacking
7–9	Very poor: ideas not communicated; organization lacking, or not enough to rate
Grammar	
22–25	Excellent to very good: accurate use of relatively complex structures; few errors in agreement, number, tense, word order, articles, pronouns
18-21	Good to average: simple constructions used effectively; some problems in use of complex constructions; errors in agreement, number, tense, word order, articles, pronouns, prepositions
11-17	Fair to poor: significant defects in use of complex constructions; frequent errors in agreement, number, tense, negation, word order, articles, pronouns, prepositions; fragments and deletions; lack of accuracy interferes with meaning
5–10	Very poor: no mastery of simple sentence construction; text dominated by errors; does not communicate or not enough to rate
Vocabulary	
18-20	Excellent to very good: complex range; accurate word/idiom choice; mastery of forms; appropriate register
14-17	Good to average: adequate range; errors of word/idiom choice; effective transmission of meaning
10-13	Fair to poor: limited range; frequent word/idiom errors; inappropriate choice, usage; meaning not effectively communicated
7-9	Very poor: translation-based errors; little knowledge of target language vocabulary, or not enough to rate
Mechanics	
5	Excellent to very good: masters conventions of spelling, punctuation, capitalization, paragraph indentation, etc.
4	Good to average: occasional errors in spelling, punctuation, capitalization, paragraph indentation, etc., which do not interfere with meaning
3	Fair to poor: frequent spelling, punctuation, capitalization, paragraphing errors; meaning disrupted by formal problems
2	Very poor: no mastery of conventions due to frequency of mechanical errors or not enough to rate