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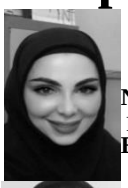
Feedback Types, Negotiation of Meaning, and Negotiation of Form in Multimodal and Text-based Computer-Mediated English Collaborative Writing



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ABSTRACT
This study aimed at investigating L2 learners' feedback preferences, negotiation of meaning, and negotiation of form in multimodal and text-based computer-mediated modalities of collaborative writing. To this end, 30 Iranian EFL learners' collaborative writing performances were traced via conversation analysis technique to identify their feedback preferences (cognitive, metacognitive, affective, recast and elicited) in two computer-mediated modalities. The chi-square analysis on frequency counts of feedback cases in language-related episodes (LRE) indicated that two computer-mediated modalities were significantly different in engaging students with different feedback types. Further conversation analysis of student's collaborative writing performances in two modalities was conducted to trace LREs in which students negotiated meaning and form. Each indicator, trigger, response, reaction chain in LREs was counted either as meaning or form negotiation units, depending on the type of LREs in which students co-managed to repair and further improve their writing outcomes. The chi-square analysis on meaning and form negotiation units indicated that text-based and multimodal computer-mediated significantly differed in their potentials of engaging students with meaning negotiation and form negotiation in collaborative writing. The results implied that despite two modalities may facilitate collaborative writing in different ways, they prepare EFL learners for distinct individual composing processes and written outcomes.

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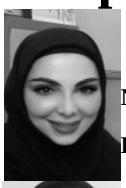

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Introduction

With the advancement of educational technologies, many teaching practitioners and researchers are intrigued with how the connecting potential of computers and the peculiarities in computer modalities which can boost learning opportunities and student engagement (Abe, 2020; Bagheri & Zenouzagh, 2021). Several studies, mostly in experimental designs, have investigated the efficacy of different computer-mediated communication modalities (CMC) from achievement and gain score perspective compared with their face-to-face classroom counterparts. These studies approved the efficacy of CMC on either learning outcomes, such as more complex language use in writing (Mohammadi, 2017; Zenouzagh, 2020), more accurate writing (Cancino & Panes, 2021) or improvement in such psychological or affective factors as student positive perception (Cequeña, 2020), motivation (Azkarai & Kopinska, 2020; Eltahir, Alsalhi, Al-Qatawneh, AlQudah, & Jaradat, 2021), enjoyment and emotion (Zhang, Liu, & Lee, 2021) and self-confidence (Hong et al., 2021) or a mixture of both better performance and a superior psychological status (Lin, 2020).

Although both timely and important, these studies left investigating student performance from sociolinguistic and constructivism perspective under-covered. In other words, while language (L2) learners collaboratively engage in a task, the opportunities rise in mutual knowledge construction, higher engagement and the process of "languaging" (i.e., the process of explanation, deliberation and suggestion) (Azkarai & Kopinska, 2020) or joint regulation and dynamic management of conversation (Guo, Xu, & Xu, 2020). Besides, experimental studies have often led researchers to focus more on creating and sharing content as the most visible and accessible practices of online spaces (Magnifico, Lammers, & Curwood, 2020) at the cost of a descriptive analysis of learners' personalized management of communication repair or their preferences for interactional feedback.

Equally under-investigated is how well CMC with its functional and structural peculiarities such as temporality of interaction (synchronous vs. asynchronous) and modality of message presentation (text vs. oral) promote online learning (Engerer, 2020; Kim, Lee, Leite, & Huggins-Manley, 2020; Lin, 2020; Salem, 2019) might affect L2 learning. Even less touched is how differently CMC modalities change student interaction and their management in the flow of conversation and in turn direct their attention to different aspects of learning process rather than product (Liu & Song, 2020). To move the field forward, this study was intended to investigate the role of multimodal and text-based CMC in student feedback preferences and co-management in negotiation of form and meaning in collaborative writing.

2. Literature Review

Computer Mediated Conversation Modalities and Language Learning

By definition, a modality is the medium or channel through which communicative intent is expressed Pereira (2010). Modality is the "semiotic realization of one mode" (p. 510), or the way specific information is encoded (e.g., the images transmitted with a webcam in videoconferencing realize a visual modality.

From temporality perspective, modalities are either synchronous, with simultaneous sending and receiving messages (e.g., when two writers composing in Google Docs simultaneously), or asynchronous, when transmission of the message takes place at different times (e.g., when a writer's posted texts in weblog are read years later). Modalities have the potential to direct L2 learners' attention to a variety of performance outcomes (Cho, 2018).

Studies supported that various CMC can lead L2 learners prioritize some language points over others (Nguyen, 2008). Synchronous text-based interactions are examples of CMC that allow L2 learners to transfer their intended messages and communicate through computers (Wigham & Chanier, 2015). Moreover, research findings suggested that due to its less teacher-centered nature, text-based CMC may increase students' verbal participation than in face-to-face classroom context. They also allow L2 learners preserve their self-images as they are called 'face-saving' (Hoffman, 1996), releasing L2 learner psychological inhibitions, allowing free speech (Freiermuth, 2001) and, boosting students' 'willingness to communicate' (Freiermuth & Jarrell, 2006).

In the last decade, technological and electronic developments have made online CMC equipped with both text and audio modalities (Stockwell, 2007). The multimodal online CMC allows more effective collaborative L2 learning than in one-dimensional online modalities (Dalgarno & Lee, 2010). However, some studies argued the possibility of psychological and emotional pressures on L2 learners in multimodal CMC. For example, Vetter and Chanier (2006) indicated that EFL beginners communication text-based chats has been more than twice in voice-based chats, with higher average number of transmitted words. However, some reported inconsistencies on CMC modalities invited further research on their benefits in L2 learning context.

E- feedback and Language Learning

L2 writing development owes a lot to feedback types in scaffolding and regulating L2 learners writing processes (Yu, Jiang, & Zhou, 2020). In traditional approach to corrective feedback in writing, language teachers have been seen as the only source of giving feedback (Tai, Lin, & Yang, 2015; Tian & Zhou, 2020). However, inspired by Vygotskian constructivism and interactionism theories of learning, the focus of corrective feedback has shifted from L2 teachers' control of the linguistic aspects in writing performance to the meaningful content with logical and generic structures, and a recursive process of writing and rewriting (Mao & Crosthwaite, 2019). Such paradigm shift was achieved through collaboration and mutual accountability in writing, and student joint ownership of written performance. In collaborative writing, learners 'scaffold' one another for betterment of the writing via feedback types on different aspects of writing (Shen, Bai, & Xue, 2020; Zenouzagh, 2020).

The advancement of technology has brought the concept of e-feedback that is received via different computer mediated communication. Electronic feedback (e-feedback) has gained recent attention due to the rapid growth of the use of CMC in language classes utilized in typically through online chats or audio platforms (Ene & Upton, 2018). Research has indicated

that both CMCs have positively affected English writing. Feedback through text-based CMC improved linguistic accuracy, syntactic complexity (Zenouzagh, 2020), interactional complexity and density of dialogic discourse (Mohammadi, 2017; Pourdana et al., 2021), more corrective feedback compared to face to face communications (Liu, Du, Zhou, & Huang, 2020), a more immediate repair of lexical and syntactic errors (Morris, 2005), more accurate grammar (Koltovskaia, 2020) and vocabulary (Tolosa, East, & Villers, 2013) and an extensive behavioral and cognitive engagement with feedbacks on forms compared to content (Fan & Xu, 2020).

Although important, these studies fail to indicate a full account of computer mediated feedback and its efficacy in learner performance. The majority of these studies have indicated superiority of text-based CMC to face-to-face actual class and hence leaving the comparison between the potential of text-based CMC and Multimodal CMC in directing student learning a promising area for research.

Collaborative Writing, Negotiation of Meaning and Form

As an activity, collaborative writing is the performance of several writers to find the best possible channel of communication (Ismael, Bakar, & Latif, 2016) and to solve the writing problems through negotiation of meaning, and reflection on form (Elola & Oskoz, 2010; Li & Kim, 2016). The interaction opportunities in collaborative writing bring individual L2 learners in to dialogic acts (Thorne & Lantolf, 2006). Collaborative writing can bring learner simultaneous attention to meaning and form. The joint ownership of the written performance, and the amount of negotiation of meaning and form are considered as measures of efficacy in any collaborative educational context (Al Ajmi & Ali, 2014).

In sociolinguistic approaches to language learning, such learner mutual accountability, negotiation and shared leadership are prerequisites (Mayo & Ibarrola, 2015). Negotiation of meaning provides L2 learners with comprehensible input and enhanced output, when they give and receive feedback on meaningfulness of the content (Mayo & Ibarrola, 2015). van der Zwaard and Bannink (2014) defined ‘negotiation of meaning’ as learners' chance for improving or managing the flow of conversation. Negotiation of meaning is characterized by such mutual modifications as comprehension checks (i.e., anticipation by the speakers for communication breakdown in a sent message), requests for clarification (i.e., listener’s elicitation of further information for clarification of the sent message), or confirmation check (i.e., listener’s attempt to examine the correct perception of the sent message).

A framework introduced by Varonis and Gass (1985) for the unit of negotiation of meaning has an indicator as the head of negotiation sequence. Indicator is realized with such as a clarification request, comprehension check, or confirmation check. Trigger is the sent message. Trigger is followed by the response and reaction to the response in a low. The sequence "indicator, trigger, response and reaction makes a unit negotiation of meaning, as following:

Trigger A: “when you speak do you translate from your mother language to English?”

Indicator B: “I didn’t get the point.”

Response A: “You know we have different cultures. We translate sentences in our…”

Reaction B: “Yes, I know it but sometime we need in some situations.”

Research reports on how opportunities for negotiation of meaning fosters language acquisition are countless (Foster, 1998; Foster & Ohta, 2005; Nakahama, Tyler, & Lier, 2001; Oliver, 2000, 2002; Pica, 1994). The reform movement which argued the focus on meaning over the focus on form revealed that as a result of focus on meaning, the students can acquire high levels of communicative skills but with minimum linguistic accuracy. Such a critical drop back required L2 teachers to integrate focus on form into meaning-based instructions (Lyster, 2015) to determine success of any educational programs (Gutiérrez, 2008; Poole, 2005; Rezaei, 2011; Storch, 2008).

Focus on form is operationalized by Language related episode (LRE). LER generally is defined as any part of a dialogue in which students talk about the language they are producing, monitor their language use, or engage in self- or peer correction at phonological, lexico-grammatical, semantic and discursive level (Mohamadi & Rahimpour, 2018). The following example shows how LRE occurs.

S1: “To get money”

S2: “We need a verb.”

S1: “Some people get money that is not right or legal.”

S2: “Right or legal?”

S1: “Legal is correct, I think.”

S2: “Not illegal?”

S1: “Ok, omit not because illegal is negative.”

Several studies approved the empowering role of CMC in fostering collaborative learning, including the study of negotiation of form and corrective feedback in chartrooms (Bower & Kawaguchi, 2011), a comparison between interactions in traditional face to face classrooms with e-learning chatrooms (Yanguas, 2010), positive effects of asynchronous online negotiation of meaning on knowledge construction (Hull & Saxon, 2009), synchronic CMC through interactive tasks (Stockwell, 2010), negotiation of meaning in telecommunication (van der Zwaard & Bannink, 2014), and the role of CMC in L2 learner focus to form (Chien, 2011; Wilske, 2015). However, to the best of the researchers’ knowledge, no research has investigated different aspects of text-based and multimodal CMC in EFL learner choices of feedback or negotiation of meaning and form negotiations in collaborative writing which is investigated in current study.

The Present Study

The present study aimed at investigating feedbacks types, negotiation of meaning and form in text-based and multimodal computer-mediated collaborative writing. To this end, following research questions were set to find the answers.

1. How is EFL learners' choice of feedback different in text-based and multimodal computer mediated collaborative writing performance?
2. How is EFL learners' co-management of negotiation of form and meaning different in text-based and multimodal computer mediated collaborative writing performance?

3. Method Participants

Participants in this study were 30 Iranian male (N = 9) and female (N = 21) intermediate EFL students with the age range of 18-25 whose L1 was Persian. They were randomly selected on the basis of their proficiency level, rated on Oxford Placement Test. The students were later randomly assigned into text-based (N = 15) and multimodal (N = 15) computer mediated collaborative writing groups. In each group, there were 5 divisions of three students whose group membership was left to their own choice.

Instruments

Multimodal CMC. As a versatile tool, Moodle offers a wide range of resources to fulfill to language learners who can collaborate in both voice and video modalities, send and respond files and comments, and can use the tracking system. At the outset, Multimodal group enjoyed a tutorial session to familiarize with Moodle platform, to receive their log-in credentials, and details on the structure of collaborative writing. The collaborative writing assignments consisted of a five paragraph essay with an introduction, three supportive paragraphs, and a conclusion. The writing topics such as poverty, unemployment, and marriage were selected based on the student contribution on a topic familiarity questionnaire.

Text-based CMC. An e-writing forum was launched on September 2016 on http//e-writingforum.ir by one of the researchers in this study. As a text-based CMC, the forum provided the participants with an opportunity to provide comments on other division members writing performance. In the collaborative writing tasks, each division member was taking turns in writing one part in the essay. It is worth to mention that, the forum was used in several other projects (Mohamadi & Rahimpour, 2018; Zenouzagh, 2020), and its user-friendliness was supported with research findings.

4. Data Collection and Analysis Procedure

In both groups of multimodal and text-based CMCs, the teacher taught principles of essay writing in an explicit teaching method, which included the teacher's lecturing on different genres of writing, tips on how to write, and how to solve problems in a PowerPoint presentation. Different genres of writing including comparison and contrast, argumentative writing, classification and divisions, and definition and description were instructed for both groups. Everything was equal in terms of topics, writing genres, and tasks. In both groups, students were free to choose their partners. They started the collaborative writing tasks with brainstorming on the topic and gathering information. They were required to outline their points on the topic and submit it to the teacher to receive her feedback. After they prepared the first draft, they evaluated the first draft collaboratively, according to the check list provided by the

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teacher in advance. Each student had to revise the draft individually with different color ink, so that they could track each other's ideas and comments. Next, they handed in final draft to the teacher. Finally, after receiving the teacher comments on the language, content and organization, the students had to prepare the revised draft collaboratively.

As mentioned earlier, the objectives of this study were investigating how Multimodal and text-based CMCs differ in terms of leading student choices of feedback types in collaborative writing and co-management of negotiation of form and meaning. After collecting the student writings, they were coded for feedback types, units of negotiation of meaning and form according to the coding schemes in Table1 (adapted from Zenouzagh, 2020).

Table 1

Conversation Analysis for Feedback Types, Units of Negotiation of Form and Meaning

Feedback Types	LREs
Cognitive A corrective feedback on a previous utterance	S1: Addiction can be the result or cause of mentioned problems. S2: Addiction can be either the result or cause of mentioned problems.
Metacognitive A corrective feedback on a previous utterance indicating the source of error, sometimes with a metalinguistic feedback	S1: Divorce can has many effects S2: divorce can have harmful effects on both children and spouses. After can have is correct. We use simple verb like must go or can play. S1: my god. Sorry, yes can have. Divorce can have bad effects on children as we as their spouses.
Affective Feedback in terms of a praising comment or a negative comment	S1. The economic problems are the major cause of addition. S2. That was damn right. But let show the connection by examples S1: It is clear. S2: No, if you don't have money how you buy drugs. S1: ok, think of an example.
Elicitation A Clarification request or a confirmation check	S1: we can say people eat high rank jobs cause make discrimination in jobs and create unemployment. S2: do you mean managers and bosses? S1: yes, they put their cousins at important jobs.

Recast Restatement of a non-target-like learner utterance in a more target-like way, and the use of higher intonation or stress on corrected word in voice based context or highlighting through bolding or italicizing in text based context to attract the attention of the peer how made the mistake.	S1: So they divorce. S2: Yes. S1: It cause many problems. S2: it causes many problems.

To analyze the data for units of negotiation of meaning, each unit was coded by identifying the sequence of indicator, trigger, response and reaction. Similarly, the data were analyzed for the units of negotiation of form by identifying the LREs. The LREs were represented in terms of dialogues in collaborative writing, through which participants produced, questioned and manipulated the language they used through self-correction or peer correction at levels of phonological, lexical, syntactic and discourse levels. The inter-rater reliability between the raters in this study. The results of the Pearson correlation indicated a significant agreement between the two raters (r (58) = .76, .000, representing a large effect size).

5. Results

An analysis of chi-square was run with the counted data to examine the research question 1 which probed the extent to which text-based and multimodal CMC caused difference in participants' choice of feedback types in their collaborative writing performance. As displayed in Table 2 and Figure 1, the participants in multimodal CMC group employed affective (27.3 %, Std. Residual = 2.5 > 1.96), elicitation (30.3 %, Std. Residual = 3 > 1.96), and metacognitive (21.2 %, Std. Residual = 2 > 1.96) feedback types more significantly than the text-based CMC group. On the other hand, the participants in the text-based CMC group used cognitive (23.5 %, Std. Residual = 4.1 > 1.96), and recast (35.3 %, Std. Residual = 3.6 > 1.96) feedback types more prominently than multimodal CMC group. The results of chi-square (χ^2 (4) = 100.97, p < .05, Cramer's V = .388, representing a moderate effect size) indicated that the differences between the types of feedback employed by multimodal CMC and text-based CMC groups was significant and meaningful.

Table 2

Frequencies, Percentages and Standardized Residuals; Feedback Types on Collaborative Writing Performance by Groups

		Type					Total
		Affective	Cognitive	Elicitation	Metacognitive	Recast	
Multimo	Count	90	20	100	70	50	330

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dal CM C	%	27.3 %	6.1%	30.3 %	21.2%	15. 2%	100 .0%
	Std. Resi dual	2.5	-4.2	3.0	2.1	- 3.7	
Text - Bas ed CM C	Cou nt	50	80	50	40	12 0	340
	%	14.7 %	23.5 %	14.7 %	11.8%	35. 3%	100 .0%
	Std. Resi dual	-2.5	4.1	-3.0	-2.1	3.6	
Tota l	Cou nt	140	100	150	110	17 0	670
	%	20.9 %	14.9 %	22.4 %	16.4%	25. 4%	100 .0%

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 49.25.
b. Chi-square = 100.974, df = 4, p = .000, Cramer's V = .388

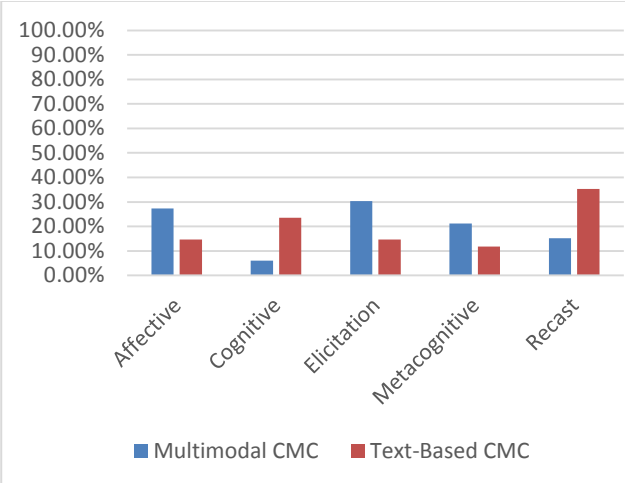

Figure 1

Percentages for Feedback Types on Collaborative Writing Performance by Groups

To examine the research question 1, which explored the extent to which the text-based and multimodal CMC made difference in participants' co-management of negotiation of form and meaning, an analysis of chi-square was run. As displayed in Table 3 and Figure 2, participants in both multimodal and text-based CMC groups employed more negotiation of form (62.3 % vs. 54.3 %) than meaning (37.7 % vs. 45.7 %). None of the std. residuals were higher than +/- 1.96. The results of chi-square (χ^2 (1) = 9.94, p < .05, Cramer's V = .08, representing a weak effect size) indicated that the difference between the choices of negotiation of form and meaning was statistically significant, although due to the weak effect size value of .08, the results were interpreted cautiously.

Table 3

Frequencies, Percentages and Standardized Residuals; Co-Management of Negotiation of Form and Meaning by Groups

		Negotiation		Total
		Form	Meaning	
Multimodal CMC	Count	430	260	690
	%	62.3%	37.7%	100.0%
	Std. Residual	1.6	-1.8	
Text-Based CMC	Count	500	420	920
	%	54.3%	45.7%	100.0%
	Std. Residual	-1.4	1.6	

Total	Count	930	680	1610
	%	57.8%	42.2%	100.0%

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 291.43.
b. Chi-square = 9.944, df = 1, p = .002, Cramer's V = .08

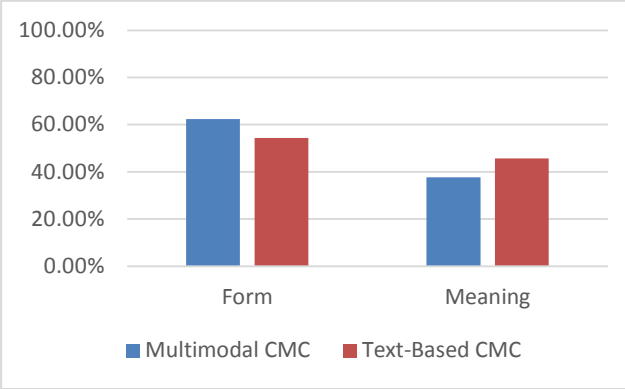

Figure 2

Percentages for Co-Management of Negotiation of Form and Meaning by Groups

6. Discussion

This study aimed at investigating the potential differences in multimodal and text-based computer mediated modalities in directing learners' choice of feedback types and their co-management of negotiation of meaning and form in their collaborative writing. The results of conversation analysis indicated that firstly, the participants in multimodal CMC group employed significantly more affective, elicitation and metacognitive feedback types in their collaborative writing, while participants in the text-based CMC group used more cognitive and recast feedback types. Secondly, both multimodal and text-based CMC engaged participants in co-management of negotiation of form more than negotiation of meaning.

The results of the study were supported by Vygotsky (1987)'s socio-constructivist approach to learning which stresses the role of 'scaffolding' the learners in their social interaction. The process of scaffolding can enhance the learner cognition within the 'zone of proximal development'. The negotiation of meaning and negotiation of form through language users interactions can help them realize their current capacities and their ultimate development in both multimodal and text-based CMCs. Moreover, socio-constructivist theories of learning suggest that engaging L2 learner in collaborative learning tasks can open the window for co-construction of language knowledge and regulating required cognitive processes (Azkarai & Kopinska, 2020) and dynamic conversation management (Guo et al., 2020). Building knowledge in group exchanges and learning through collaboration are promoted by constructivism and sociocognitive theories. In an intensive process of collaboration and negotiation, autonomous problem solving and learning performance can be improved (Cunningham & Link, 2021; Dellatola, Daradoumis, & Dimitriadis, 2020; Felipeto, 2019).

The results implied that both modalities were effective in preparing EFL learners for collaborative writing process. However, the two modalities were facilitative in different ways. The distinctive benefits of different CMC modalities in EFL writing has also been confirmed by several studies (Abtahi,

پژوهش‌های زبان‌شناختی در زبان‌های خارجی، دوره ۱۱، شماره ۳، پاییز ۱۴۰۰، از صفحه ۴۵۳ تا ۴۷۱

Abadikhah, & Dehqan, 2020; Killingback, Ahmed, & Williams, 2019; Y. Zhang & O'Halloran, 2019). However, unlike the present research which assigned no supremacy to either multimodal or text-based modalities, research literature on collaborative writing has confirmed repeatedly the superiority of either multimodal or text based modality in L2 writing. For example, Shin, Cimasko, and Yi (2020) picked up a systemic functional grammar approach to multimodal discourse analysis (SF-MDA) and principles of sociosemiotic ethnography to confirm the advantage of multimodal CMC in L2 writing performance. Similarly, Rassaei (2019) in an experimental pretest posttest research indicated that audio-based CMC modality is more effective that text-based CMC in triggering corrective feedback in collaborative writing. Similarly, Cunningham and Link (2021) indicated that video-based CMC primed more social relations than text-based CMC in language learning. Philippe et al. (2020) in a review on efficacy of multimodal CMC supported its positive role in fostering EFL learning. Multimodal CMC was also favored by students for its clarity, efficiency and user-friendliness relative to text-based CMC (Cunningham, 2019).

As far as negotiation of meaning and negotiation of form are concerned, in both multimodal and text-based modalities for collaborative writing, students were more actively engaged in negotiation of form. In other words, both modalities directed student focus more towards grammar-based communication repairs and L2 development. L2 learner engagement with grammar in both modalities can be justified with a reference to Iranian students' general propensity towards grammar and text-based curriculum (Mohamadi & Rahimpour, 2018). The curriculum for English teaching materials in Iran has largely focused on language form(s) rather than meaning conveyance, therefore; it has hardly been affected by more recent sociolinguistic or constructivist approaches towards language learning. However, text-based computer mediated writing is not without advantage. In addition, previous CMC studies (Levy, 2009) supported the engagement of language learners in text-to-oral modality transition which happens in the chat rooms. Chat logs have largely been promoted as a beneficial electronic medium wherein a spontaneous and authentic version of L2 learners' oral discourse is produced and monitored upon its syntactic and semantic aspects (Steel & Levy, 2013). Such reflection on CMC text-based utterances which are more complex than the L2 learner oral discourse could integrate sophisticated impressions into their natural speech and eventually improve their oral fluency and accuracy. In this way, L2 learners would notice and revise the instances of non-target language forms while engaging in collaborative negotiation of the form. As a result, CMC collaborative negotiation of form raises the L2 learners' awareness of the target language form and improves their lexical and grammatical accuracy (Tudini, 2003).

The results of this study were in contrast with what (Worajittiphon, 2012) who proposed that in synchronous text-based CMC, grammatical errors were often ignored in the original conversations as they had less effect than lexical

triggers on L2 learner comprehension. In a large-scale survey, Zeng and Takatsuka (2009) reported the efficacy of text-based CMC on L2 learners focus on form through collaborative writing from student perspective.

7. Conclusion

The results in this study implied that both multimodal and text-based CMC modalities had important benefits in preparing learners for collaborative writing process, but in different ways. The teaching practitioners need to make principled decisions on the use of each CMC modality or a mixture of both, they should choose on their basis of priorities in a writing course. For example, when the teachers intended to provide learning opportunities for L2 learner general ability in organizing and monitoring syntactic knowledge, or to prepare remedial materials to practice grammar, they can implement multimodal CMC platform. Similarly, for more enthusiastic student engagement with writing process, for betterment of their self-confidence, or for filtering learning anxiety, a multimodal CMC will be functional, since students' affective factors are well-regulated. Similarly, text-based CMC can be more effective in instructional programs for writing where teachers require of learner selective attention towards specific linguistic items.

Despite the interesting findings in the present study, this research avoided to account for participant individual differences, individual accountability, group work skills, and the teacher impact, as they were assumed as construct irrelevant factors. Besides, the haphazard infrastructure privileges, such as the high-speed or Wi-Fi internet which are serious issues in the Middle East countries such as Iran (Rabiee, Nazarian, & Gharibshaeyan, 2013), could possibly serve some participants better than others. To this matter, the researchers failed to compensate.

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