Exploring the Impact of Scaffolded Written Corrective Feedback on Iranian EFL Learners' Writing Quality: A Sociocultural Theory Study

Ehsan Abbaspour[1], Mahmood Reza Atai[2*], Parviz Maftoon[3]

[1]Ph.D. Student, Department of Foreign Languages, Science and Research Branch, Islamic Azad University, Tehran, Iran,*abbaspour1986@gmail.com*

[2*]Professor, Kharazmi University, Tehran, Iran, *mahmood.atai@gmail.com*

[3]Department of Foreign Languages, Faculty of Literature, Humanities, and Social Sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran, *pmaftoon@srbiau.ac.ir*

Abstract

The prevalence of Sociocultural Theory (SCT) as a major theory in SLA has spurred a considerable number of studies to investigate the various aspect of L2 acquisition through the lens of this theoretical framework. The present study aimed at investigating the impact of Scaffolded Written Corrective Feedback (WCF) on Iranian EFL learners' writing performance in terms of fluency, accuracy, grammatical complexity, and lexical complexity. Additionally, the study sought to inquire about the Iranian EFL learners' attitudes toward Scaffolded WCF through a series of post-interviews and a questionnaire. For this purpose, 25 students who had enrolled in a university-level writing course were conveniently sampled after a homogeneity test for the study. The pedagogical treatment the participants received throughout the study was Scaffolded WCF (i.e. a ZPD-based teacher/peer corrective feedback on their writing performance). The data obtained from the pretest, immediate posttest, and delayed posttest were analyzed using a series of ANOVA and Friedman's tests. The findings indicated that Scaffolded WCF statistically significantly contributed to the participants' writing performance regarding grammatical complexity, fluency, accuracy, and lexical complexity. The results obtained from the attitude questionnaire and the post-interviews also revealed that the participants held a positive attitude toward the adopted approach. The findings provide promising implications for the adoption of this approach in large classes typical of Iranian university-level writing courses.

1. Introduction

Prevalence of process approach to writing has led to Written Corrective Feedback becoming an integral part of writing classes (Abbaspour et al., 2020). Most writing researchers vouch for the efficacy of corrective feedback provision on the learners' writings (Ferris et al., 2013; Han & Hyland, 2015; Liu & Brown, 2015, Nassaji, 2018; Yu & Hu, 2017); however, there are still a few (e.g. Truscott, 2016) who believe that this cumbersome ordeal is not worth its while or is even detrimental. Although the literature is thick with regard to studies investigating the efficacy of various approaches to WCF from different angles, such studies are still inconclusive and recurrently contradictory.

The paradigm shift in SLA research from cognitivism to the Sociocultural Theory has led to reconceptualizing writing strategies within the framework of this theory (Abbaspour et al., 2020). Accordingly, the studies investigating the efficacy of WCF from the Sociocultural Theory's perspective have gained momentum (Aljaafreh & Lantolf, 1994; De Guerrero & Villamil, 2000; Han, 2017, 2019; Mak, 2019; Merkel, 2018; Nassaji, 2011; Nassaji & Swain, 2000; Rassaei, in press).

The main incentive to study the very topic is the need for more research on mediation and strategic mediation in the SLA literature. More careful studies should be done to identify the role of mediation and sociocultural approaches in language learning (Lantolf & Thorne, 2006). The existing studies are generally conducted in small classes or in laboratory settings. The present study, however, intends to investigate the efficacy of WCF from SCT perspective in large classes typical of Iranian EFL university courses.

Moreover, the studies investigating the efficacy of WCF from the perspective of grammatical and lexical complexity as well as fluency and accuracy are in short supply, and to date, no such studies have been carried out in the framework of SCT. Utilizing these objective measures of writing quality will shed more light on the impact of Scaffolded WCF on the learners' writing performance from another perspective.

2. Literature Review

2.1. Writing as Process or Product

A distinction has been made between product writing and process writing by L2 writing scholars. Historically, writing instructors only focused on the end-product of writing and paid no heed to the writing process. The major purposes of writing were to 1) follow the prescriptive benchmarks of writing style, 2) be grammatically error-free, and 3) be organized in

congruence with the conventions writing (Vaezi & Abbaspour, 2015). The predominant focus was dedicated to a writing 'model' which the student writers were required to imitate and to how the student's end product is evaluated based on criteria of organization, content, vocabulary use, grammatical use, and mechanics (i.e. spelling and punctuation). Therefore, instructors had to provide assistance to their students in order to enable them to produce the desired outcome. In other words, the teaching process was at the service of the end-product. Along the same line, Murray (1980, p. 30) states that:

> [T]he process of making meaning with written language cannot be understood by looking backward from a finished page. It is possible, however, for us to follow the process forward from blank page to final draft and learn something of what happens.

Zamel (1983, p. 165) supports this position by saying that, "researchers are now exploring writing behaviors, convinced that by studying and understanding the process of composing, we can gain insights into how to teach it."

2.2. Post-process Writing

The contemporary and prevalent social view toward language, in general, and second language writing, in particular, has led to a new approach (if not a paradigm) toward writing. This approach, known as Post-process writing, was first popularized in the writings of Thomas Kent, especially his seminal book *Post-process Theory* (1999), where he delineates that writing is 'public', 'interpretive' and 'situated'. By public, Kent means that writing is not detached from its social setting as it is produced and read by people. Therefore, it must be viewed in its cultural/historical context. He claims that writing is interpretive because it is more than the mechanical process of rendering ideas into words. Finally, by saying that writing is situated, Kent is drawing upon Michel Foucault's post-structuralist view that "the author is an ideological product" (Foucault, 1984, p.119).

As of the early 2000s, an increasing number of researchers (Atkinson, 2003a; Atkinson, 2003b; Casanave, 2003; Matsuda, 2003) have supported a move beyond the asocial process approach to writing towards a social direction. Cumming, Busch, and Zhou (2002) recommended that L2 writing strategies should be "analyzed in reference to the goals people have to motivate and guide their task performance as well as other essential aspects of these activity structures and the contexts in which they are embedded" (p. 193). Atkinson (2003b) also is of the mind that the missing link in such an agenda is "the notion of 'post-process' as an appropriate basis on which to investigate the complex activity of L2 writing in its full range of

sociocognitive situatedness, dynamism, diversity, and implications" (p. 10). However, Matsuda (2003) and Casanave (2003) call for caution in adopting the yet underdeveloped term of post-process and advocate that a socio-politically-oriented approach process writing is the solution.

However, it must be mentioned that even Atkinson himself believes that the post-process approach to writing is more of an extension of the well-established process writing rather than a revolutionary idea. He explicates that his "interest in the concept of 'post-process' is, therefore, not in terms of a basic 'paradigm shift,' but rather in expanding and broadening the domain of L2 writing—in research as much as in teaching" (Atkinson, 2003b, p.11).

2.3. Written Corrective Feedback: Necessary or Noxious

With regards to the efficacy of Written Corrective Feedback, unlike the majority of L2 writing scholars, some researchers are adamant that correction in writing classes must be restricted (e.g., Krashen, 1984; Zamel, 1985) or even should be altogether eschewed (Truscott, 1996, 1999, 2007, 2016). Truscott (1996) in his contentious paper claims that corrective feedback not only does not help learners, but it also is detrimental. Reviewing a number of research studies regarding the efficacy of WCF, he enumerates his reasons to argue against the efficacy of corrective feedback as follows:

1) Research indicates that grammar correction is not effective.
2) "This lack of effectiveness is exactly what should be expected, given the nature of the correction process and the nature of language learning" (Truscott, 1996, p.328).
3) Correcting grammatical errors has harmful effects on learners.
4) The arguments offered in favor of continuing grammar correction are of insignificant value.

Truscott's views, which he has staunchly repeated many times ever since (Truscott, 1999, 2007, 2016), contributed to vigorous debate among scholars and received numerous rebuttals. In one of the earliest rejoinders to Truscotts's claims, Ferris (1999, p.2) wrote that Truscott's arguments are "premature and overly strong". She further explicated that "(a) The subjects in the various studies are not comparable; (b) The research paradigms and teaching strategies vary widely across the studies; and (c) Truscott overstates negative evidence while disregarding research results that contradict his thesis" (Ferris, 1999, p.4). This view has been supported by the majority of studies on the efficacy of WCF including those of Bitchener (2008), Chandler (2003), and Lee (2004) as well as a meta-analysis by Kang and Han (2015).

Despite the numerous arguments and their corresponding confutations regarding the efficacy of WCF, both camps are still standing their grounds

firmly. This conflict is rooted in the fact that different researchers subscribe to different theories of SLA which are at times contradictory in nature. In this case, Truscott adheres to a modular theory of SLA (i.e. Modular On-line Growth and Use of Language) where he (Truscott, 2017) posits that nothing from outside the system can contribute to the acquisition process. Therefore, corrective feedback, as an external intervening factor, cannot play a facilitative role in acquisition and has counterproductive impacts.

2.4. The Role of WCF in Sociocultural Theory

As a reaction to generative and cognitive views toward learning, Vygotsky (1978) claimed that knowledge is socially co-constructed. Central to his theory is the concept of Zone of Proximal Development (ZPD) which refers to an area of learning between what learners can do alone and what they can do with assistance and guidance from a more competent other (peers or teachers). This assistance is usually in the form of collaborative scaffolding (Wood et al., 1976). Memari Hanjani (2019, p. 43) defines scaffolding in SLA as "those supportive behaviors employed by the more advanced partner in collaboration with the less competent learner that aim to foster L2 learner's progress to a higher level of language proficiency".

Another essential component of Sociocultural Theory is the concept of mediation. Mediation is "the process through which humans deploy culturally constructed artifacts, concepts, and activities to regulate the material world or their own and each other's social and mental activity" (Lantolf & Thorne, 2006, p. 79). According to Lantolf and Thorne (2006), mediation in second language setting is classified into three types: 'Mediation by others in social interaction', 'mediation by the self through private speech', and 'mediation by artifacts rather than language'. Lantolf and Thorne elaborate on the social mediation in terms of expert/novice mediation and also peer-mediation which is applicable to SLA classroom.

Probably the first study investigating the mediating role of WCF within the framework of SCT was Aljaafreh and Lantolf (1994). In this study, the researchers utilized the following 13-stage regulatory scale for negative feedback provision.

1. Tutor asks the learner to read, find the errors, and correct them independently, prior to the tutorial.
2. Construction of a "collaborative frame" prompted by the presence of the tutor as a potential dialogic partner.
3. Prompted or focused reading of the sentence that contains the error by the learner or the tutor.

4. Tutor indicates that something may be wrong in a segment (e.g., sentence, clause, line)-"Is there anything wrong in this sentence?"

5. Tutor rejects unsuccessful attempts at recognizing the error.

6. Tutor narrows down the location of the error (e.g., tutor repeats or points to the specific segment which contains the error).

7. Tutor indicates the nature of the error, but does not identify the error (e.g., "There is something wrong with the tense marking here").

8. Tutor identifies the error ("You can't use an auxiliary here").

9. Tutor rejects learner's unsuccessful attempts at correcting the error.

10. The tutor provides clues to help the learner arrive at the correct form (e.g., "It is not really past but something that is still going on").

11. The tutor provides the correct form.

12. The tutor provides some explanation for use of the correct form.

13. The tutor provides examples of the correct pattern when other forms of help fail to produce an appropriate responsive action. (Aljaafreh & Lantolf, 1994, p. 471)

The scale starts with implicit correction where the minimal intervention takes place and the instructors provide opportunities for self-correction. If the learners fail to notice or correct the errors the instructors gradually resort to slightly more explicit feedback strategies prior to providing the correct answer themselves.

The study merely proposes a new method for feedback provision in the learners' ZPD and fails to test the efficacy of the method statistically. One of the main shortcomings of this method is that too much attention has been directed at linguistic/formal aspects at the expense of the content. Another drawback of the method is related to its practicality. The provision of thirteen feedback moves on a single error makes the task extremely tedious for both learners and instructors. Probably, this is due to the same practical constraint that the researchers have conducted this case study with only three participants.

Despite the aforementioned issues, this study broke new grounds for further research on WCF from an SCT perspective and became one of the most-cited research articles in the area of corrective feedback.

In another pioneering case study conducted by De Guerrero and Villamil (2000), the role of peer WCF was investigated within SCT. The study focused on a single episode of interaction produced by two learners (one reader and one writer) collaboratively revising a text written by one of them. The researchers analyzed the episode qualitatively and no statistical

analysis was carried out. The study concluded that in a peer revision session both reader and writer benefit from the process and as De Guerrero and Villamil (2000, p. 51) put, "peer revision scaffolding may be mutual rather than unidirectional".

These seminal articles have become the cornerstone of further studies on Scaffolded WCF from an SCT perspective. One of the first attempts to quantitatively assess the efficacy of Aljaafreh and Lantolf's (1994) feedback provision regulatory scale was made by Nassaji and Swain (2000). In a case study, the researchers compared the potential impacts of negotiated WCF (using the regulatory scale) and random non-collaborative WCF. The findings supported the hypothesis that negotiated feedback is more effective. More than a decade later, Nassaji (2011) replicated the same study with 31 intermediate ESL learners enrolled in an intensive English language writing course in Canada. The participants were assigned to two classes, one of which received oral negotiated feedback and the other one received nonnegotiated feedback (i.e. direct reformulation as well as prompt and reformulation). The results suggested that the class which received negotiated feedback benefitted more compared to the other class. These findings are closely in line with those originally hypothesized by Aljaafreh and Lantolf (1994).

Merkel (2018) investigated Scaffolded Written Corrective Feedback from a Bakhtinian dialogic perspective which posits that both interlocutors develop understanding during the interactions. In other words, in such studies, the researcher/instructors are participants themselves. Accordingly, the participants in this study were the researcher himself, an English native speaking writing instructor and a Chinese Ph.D. candidate who was trying to write a book chapter on learning Chinese characters. The researcher / participant, a Ph.D. candidate himself, had an immense knowledge of English academic writing but lacked content knowledge about Chinese L2 acquisition, while the other participant, despite being an advanced English language user, lacked the academic writing skills necessary for writing the book chapter. During multiple online and one-on-one dialogs, the researcher provided feedback on the Chinese participant's work and at the same time developed his own knowledge of Chinese L2 acquisition as a result of the interactions. Upon analyzing the data, Merkel concluded that in the course of study, the Chinese participant developed her English academic writing expertise through heightening her awareness of the audience. Additionally, as a result of the researcher's questions regarding the content matter, the Chinese participant clarified her text to make it more apprehensible for the audience. Finally, the researcher/participant expanded his subject-specific expertise as a result of the dialogs. This innovative study is rich with

implications for ESP/EAP instructors as it encourages them to resort to dialogic scaffolding techniques while commenting on the students' writings.

Despite its promising implications, it is not clear whether such an approach is applicable in larger classrooms as it would be extremely arduous on the part of the instructor to be engaged so deeply in various content matters. In addition, although the content of the book chapter did not lie directly in his field of expertise, the researcher was an SLA scholar and therefore was not unfamiliar with general language acquisition issues. Thus, there is no guarantee that the same would work optimally with other technical contents such as those pertaining to science and technology considering the researcher/participant's profound lack of background knowledge in those areas of inquiry.

In another study, Mak (2019), drawing on the premises of SCT, investigated the efficacy of a three-stage feedback provision approach and the learners' perception of this approach. In this approach, there are three stages of pre-feedback, during-feedback, and post-feedback in the feedback cycle. At the pre-feedback stage (also labeled as feed up), the instructor sets the goals and clarifies the assessment criteria for the students. The second stage, i.e. during-feedback stage (also labeled as feed-forward), is dedicated to self, peer, and teacher feedback provision based on the specific assessment criteria. The feedback type at this stage is metalinguistic coded WCF as well as focus WCF. The final stage of post-feedback is concerned with the preparation of error logs and reflection sheets. The study is conducted in Hong Kong and included two writing classrooms (two teachers and sixty-three 11 and 12-year-old students). A questionnaire designed by the researcher and aiming at probing the students' attitude toward L2 writing in general and WCF in specific was administered to the students once before the students experiencing the innovative feedback cycle and once after the conclusion of the course. The results indicated striking differences in the learners' attitude prior to and after the experiment. After completing the feedback cycle, the students developed a liking for L2 writing and the feedback provision approach as they felt they had a goal for writing and the students' motivation and self-confidence increased as a result of the feedback approach which included self-correction, peer, and teacher feedback.

Han (2019) studied the efficacy of WCF from an ecological perspective on language learning, which heavily draws on works by van Lier and his colleagues (Duff & van Lier, 1997; van Lier, 2004). Essential to this framework is the concept of affordance which refers to "a relationship between an organism (a learner, in our case) and the environment, that signals an opportunity for or inhibition of action" (van Lier, 2004, p.4). This

concept of affordance is closely related to the Vygotskyan concept of mediation. In this study, Han (2019) intended to find the affordances (i.e. the mediating factors) influencing the learners' engagement with WCF. In this case study, which included a writing instructor and two Chinese EFL learners (one average and one under-achieving student), the researcher found that the learners benefited from a plethora of factors present in their learning environment (e.g. instructor, instruction, peer, computer, etc.). The findings call for a multi-layered perspective toward L2 writing instruction and research where various environmental factors are at play. These findings are precisely in line with those of other studies conducted in the framework of SCT.

Most recently, Rassaei (in press) investigated the impacts of dynamic and non-dynamic WCF on EFL learners' writing accuracy. He (p. 1) defines dynamic feedback as "graduated assistance which is tailored to learners' zone of proximal development (ZPD)" and non-dynamic feedback as the explicit correction. For this purpose, he assigned 96 Iranian EFL learners to three groups, one receiving dynamic, one non-dynamic WCF, and one control group (no feedback). To measure the accuracy of the participants' writing, the researcher adopted a writing test as well as an error identification test. The findings indicated that the group which received dynamic feedback in their ZPD clearly outperformed the other two groups in terms of writing accuracy.

What reviewed above are a few prime examples of studies investigating the efficacy of WCF provided in the learners' ZPD. To refer to this approach, researchers have used various terminology such as Scaffolded WCF, negotiated WSC, and dynamic WCF all of which are essentially the same. These studies indicate that the provision of WCF which is in the learners' ZPD can significantly improve the learners' writing performance.

Accordingly, in this study, the following research questions were raised:

1. Does providing Scaffolded Written Corrective Feedback have any statistically significant impact on Iranian EFL learners' writing quality in terms of grammatical complexity, fluency, grammatical accuracy, and lexical complexity?

2. What are the Iranian EFL learners' attitudes toward Scaffolded Written Corrective Feedback?

3. Method

3.1. Participants and the Context of the Study

The study involved 25 ($N = 25$) university-level students majoring in English Translation (20 females and 5 males) from two Advanced Writing classes (also known as Paragraph Writing) at a university in Tehran, Iran. The participants' age spanned from 19 to 43 with an average of 23.3 ($M = 22.3$). The Advanced Writing course as guided by the requirements of Iran's National Teaching Syllabus for university students majoring in English Translation, developed by Iran's Ministry of Science, Research and Technology, is a 16-session (each session is 90 minutes long) compulsory course. The intended outcome is for the students to learn different methods of paragraph development in English. During the course, the students are acquainted with different types of paragraphs including illustration (exemplification), description, process analysis, comparison/contrast, cause/effect, definition, and classification.

Despite the theoretical popularity of the process writing, university-level writing instructors, in effect, simply adhere to product-oriented approaches to teaching L2 writing. The adopted approach is essentially single-draft and form-focused with minimal (if any) focus on revision. The utilized corrective feedback types are generally explicit and limited to the form and the content is solely trivially addressed. The source of feedback is exclusively the instructor and peer interaction/collaboration is generally overlooked.

3.2. Design

A mixed-method design was used for conducting the research study. With respect to the quantitative aspects, a repeated-measures design, including a pre-test, an immediate posttest, and a delayed posttest was adopted. However, the qualitative research question was dealt with through triangulation of data (i.e. classroom recordings, questionnaire, and field notes).

3.3. Instruments

Nine instruments were used in the present research: (1) a general language proficiency test (TOEFL), (2) a writing pretest, (3) immediate writing posttest, (4) delayed writing posttest, (5) writing tasks (throughout the course), (6) students' mediation strategies questionnaire, (7) writing quality scoring scheme, (8) field notes, and (9) classroom recordings.

3.3.1. General Proficiency Test

A mock version of TOEFL (Phillips, 2001) was given to the participants of the study in the first session of the course in order to establish whether there are any differences in their general language proficiency, so as to ensure the homogeneity of the participants. Due to the nature of this study, only four sections (the written sections) of the test were utilized:

Section I: Structure and written expressions (40 items)

Section II: Vocabulary (30 items)

Section III: Reading comprehension (30 items)

Section IV: Test of Written English (TWE) (a 150-word long paragraph)

The total score of the test is 130. To ensure the content validity of the instrument, two experts reviewed the items. In addition, the internal reliability of the instrument was estimated (Cronbach's $\alpha = 0.832$).

3.3.2. Pre-test, Immediate Post-test, and Delayed Post-test

For the pretest, immediate posttest, and delayed posttest, the participants were required to accomplish three expository writing tasks. Accordingly, the participants had to write an expository paragraph of around 150 words about the given topics. Each task was to be accomplished in sixty minutes. In order to increase the comparability of the results in the three tests, the given writing tasks were of the same mode (i.e. descriptive).

3.3.3. Writing Tasks

Students performed seven writing tasks on the assigned topics (i.e., exemplification, description, definition, cause/effect, comparison/contrast, classification, and process) each including roughly 150 words during a period of sixteen weeks (one new paragraph was written every second week and the week after was dedicated to the revision and redrafting processes). No time limitation for the accomplishment of the writing tasks was imposed so the participants could focus on the quality of the works regardless of the constraints of time.

3.3.4. Attitude Questionnaire and Semi-structured Post-interviews

In order to investigate the language learners' perception of being engaged with the process of receiving Scaffolded WCF, a 17-item attitude questionnaire was designed, validated, and administered. The items in the questionnaire were classified under the three categories of 'affective factors', 'linguistic factors', and 'applicability factors' (See Appendix B). These three factors focus on how comfortable the learners were with the procedure, how

helpful they considered this approach with respect to their writing quality, and how easy working within such a framework was for them. The respondents had to indicate their attitude by choosing from the four options of Strongly Disagree (1), Disagree (2), Agree (3), and Strongly Agree (4). It must be noted that due to the limited number of the participants, a vigorous mathematical analysis of the psychometric properties was impossible. Therefore, the instrument was only content validated, and its internal reliability was estimated (Cronbach's α = 0.792). To ensure the content validity of the questionnaire, the 17 items were chosen from an item pool of 23 items with assistance from two applied linguistics experts.

Along the same line with the attitude questionnaires, a series of semi-structured post-interviews were conducted with the learners to obtain more in-depth information on their views towards Scaffolded Written Corrective Feedback.

3.3.5. Field Notes

Due to the contingent nature of the classroom dynamics and for the purpose of later analysis of the qualitative data, the researchers took note of the potentially important and unanticipated classroom interactions and raised questions or contradictions. The qualitative data obtained through the field-notes later were utilized to interpret and elucidate the findings of the study.

3.3.6. Classroom Recordings

Some of the peer feedback instances were randomly audio recorded throughout the course so they could be analyzed to gain insights into the nature of the peer-peer negotiations (see Appendix A).

3.4. Procedure

Prior to the commencement of the study, in order to ensure the homogeneity of the included participants in the study, a mock version of TOEFL taken from the book *Longman Preparation Course for the TOEFL Test* (Phillips, 2001) was administered to the participants and the participants whose scores lay within one standard deviation above and below the mean score were selected.

Then, in the first session of the course, the pretest was administered, whereby the selected participants were required to write an expository paragraph based on the given topic. As per the instructor's instructions, the paragraphs were supposed to contain around 150 words.

Before the treatment starts and in order to make the participants familiar with ways they could provide fair and accurate peer feedback, the instructor conducted a one-hour workshop in which the participants were

acquainted with the potential benefits of peer feedback and were trained to provide effective peer comments. For this purpose, the instructor provided the students with a set of guidelines (in form of questions) which drew their attention to different aspects of the written text such as content, organization, vocabulary, etc. In the same workshop, the characteristics of a sound paragraph were discussed and examples were shown to the students.

In the first session of the treatment process, after writing their first draft, students handed over their writings to the instructor. The instructor decided whether the draft needed feedback on forms, content, or both. As the previous research has indicated, Iranian EFL learners acting as peer reviewers tend to equate feedback to commenting solely on the formal errors and ignoring the content errors (Vaezi & Abbaspour, 2015). In order to counter this tendency, the instructor assigned two different students to provide peer feedback on either content errors or formal errors (if any comment was necessary); therefore, the peer reviewers were spurred to pay the due attention to both types of errors. In the selection of the peer-feedback providers, the proficiency level of the participants was not taken into account since it was assumed that both more and less proficient learners could benefit from the feedback provision process. The drafts, along with the comments, were returned to the student writers to revise the text based on the comments they had received. The second draft was submitted to the instructor again, and he commented on any probable remaining errors. Finally, the student writers revised the second draft and submitted the final draft to the instructor. After this final revision, the instructor conducted whole-class conferences addressing the common errors the student writers had made hoping that they would learn from one another's mistakes. In the treatment phase, the student writers were required to write seven unique paragraphs on the assigned topics. The modes of these paragraphs were cause/effect, comparison/contrast, definition, description, process, exemplification/illustration, and classification/division.

It must be mentioned that the comments both the peers and the instructor provided were initially indirect WCF in the form of indicating and locating (underlining) the errors and keeping the explicit explanation or provision of the correct form to the bare minimum.

Example:

*I prefer to living in an apartment than in a house.

A more explicit explanation was provided only if the provided feedback did not lead to uptake (i.e. the student writer could not correct the error or did not understand the purpose of the comments). These explicit comments were provided orally.

Example:

*I prefer to living in an apartment than a house.

Peer oral comment: You can't use infinitive and gerund at the same time. Use either 'to' or '-ing'.

The reason behind this is that while providing scaffolded corrective feedback based on sociocultural theory the first feedback move must be as implicit as possible (Aljaafreh & Lantolf, 1994) to engage the student writer more cognitively (and therefore contribute to their microgenetic growth) and hopefully increase the chance of noticing the errors by the writer. The procedure has been illustrated in a flowchart in Figure 1.

Figure 1

The Flowchart of the Treatment Procedure
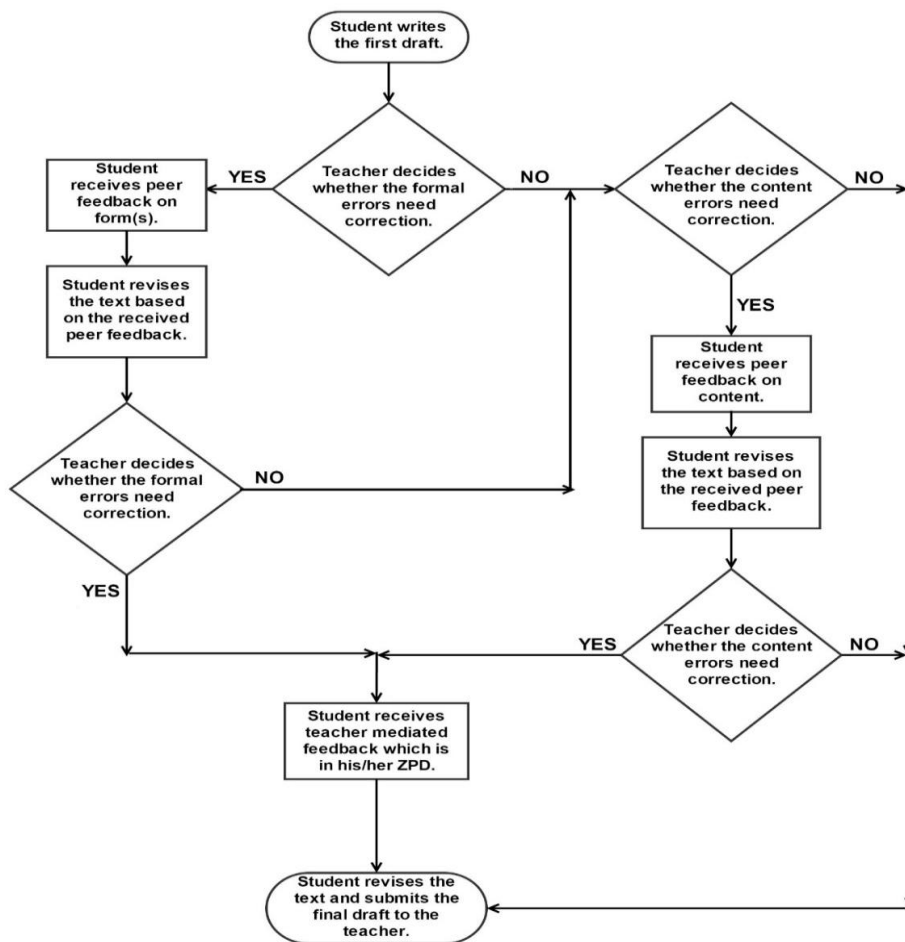
One week after the submission of the final draft of the seventh paragraph, student writers were given an immediate posttest on one of the seven paragraph types addressed during the course. The delayed posttest was given one month after the immediate posttest. After the posttest, the students were asked to answer the attitude questionnaire and the post-interviews were conducted.

The students' drafts in the pretest, the posttest, and the delayed posttest were scored using online software (Ai, 2017a; Ai, 2017b). For this purpose, the paragraphs were types by the researcher (leaving the errors intact) and fed to the software. The paragraphs were scored in terms of fluency, grammatical accuracy, grammatical complexity, as well as lexical complexity. For calculation of the aforementioned constructs, the following formulae, obtained from Wolfe-Quintero, Inagaki, and Kim (1998), were used:

Table 1

Different Measures of Writing Quality and Their Corresponding Adopted Formulae

Fluency	The average number of words per T-unit (W/T)
Grammatical accuracy	The proportion of error-free T-units to T-units (EFT/T)
Grammatical complexity	The average number of clauses per T-unit (C/T)
Lexical complexity	The mean segmental of type-token ratio (MSTTR) method which determines the mean TTR of (50-word) segments of the text

4. Results and Discussion

4.1. Results

This study includes one set of quantitative data which consisted of 75 paragraphs written as a response to three writing tasks (i.e. pretest, immediate posttest, and delayed posttest).

The qualitative dataset was obtained from the 17-item attitude questionnaire which addressed the attitude of the participants toward the adopted method of feedback on their writings.

The first research question dealt with the objective/quantitative scoring of the written paragraphs using online software. The paragraphs were scored in terms of fluency, grammatical accuracy, grammatical complexity, as well as lexical complexity.

To check the parametricity of the data, a test of normality of the data was run. The results showed that the data pertaining to the fluency, grammatical complexity, and lexical complexity scores were normally distributed. Therefore, for these scores, the parametric test of Repeated-Measures ANOVA and for the grammatical accuracy scores, the non-parametric test of Friedman was used.

In order for comparing the participants' pre-test, immediate post-test, and delayed post-test in terms of the participants' fluency scores, a repeated-measures ANOVA with a Greenhouse-Geisser correction (to adjust the lack of sphericity) was performed which showed that mean fluency scores differed statistically significantly between pre-test, immediate post-test, and delayed post-test ($F (1.12, 26.90) = 117.61, p < 0.00$).

As illustrated in Table 2, Post hoc test using the Bonferroni correction revealed that the fluency scores have elicited a sharp increase from the pre-test to the immediate post-test (12.92 vs. 17.36, respectively), which was statistically significant ($p = .00$). However, the scores from immediate post-test to delayed post-test (17.36 vs. 17.34, respectively) did not change statistically significantly ($p = 1.00$). Therefore, we can conclude that the fluency scores improved significantly after the treatment; however, it remained relatively constant after a month.

Table 2

Post-hoc Test for the Fluency Scores

(I) Fluency	(J) Fluency	Mean Difference (I-J)	Std. Error	*Sig.*[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
PRE	IP	-4.43*	.39	.00	-5.45	-3.41
	DP	-4.42*	.40	.00	-5.46	-3.38
IP	PRE	4.43*	.39	.00	3.41	5.45
	DP	.012	.11	1.00	-.28	.30
DP	PRE	4.42*	.40	.00	3.38	5.46
	IP	-.012	.11	1.00	-.30	.28

Based on estimated marginal means
*. The mean difference is significant at the .05 level.
b. Adjustment for multiple comparisons: Bonferroni.

In order to compare the participants' pre-test, immediate post-test, and delayed post-test in terms of the participants' grammatical accuracy scores, a Friedman's test was conducted which revealed that there was a statistically significant difference between the scores obtained from pre-test, immediate post-test, and delayed post-test, $\chi^2 (2) = 41.35, p = 0.00$.

As illustrated in Table 3, Post hoc test using Dunn's test revealed that the grammatical accuracy scores have elicited a sharp increase from the pre-test to the immediate post-test (.39 vs. .53, respectively), which was statistically significant ($p = .00$). However, the improvement of scores from immediate post-test to delayed post-test (.53 vs. .54, respectively) was not statistically significant ($p = 1.00$). Therefore, we can conclude that the grammatical accuracy scores improved significantly after the treatment; however, it remained relatively constant after a month.

Table 3

Post-hoc Test for the Accuracy Scores

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.
PREACC-IPACC	-1.38	.28	-4.87	.00	.00
PREACC-DPACC	-1.50	.28	-5.30	.00	.00
IPACC-DPACC	-.12	.28	-.42	.67	1.00

Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

To compare the participants' pre-test, immediate post-test, and delayed post-test in terms of the participants' grammatical complexity scores, a repeated-measures ANOVA with a Greenhouse-Geisser correction (to adjust the lack of sphericity) was performed which indicated that mean grammatical complexity scores differed statistically significantly between pre-test, immediate post-test, and delayed post-test ($F (1.47, 35.48) = 85.28, p < 0.00$).

As illustrated in Table 4, Post hoc test using the Bonferroni correction revealed that the grammatical complexity scores have elicited a sharp increase from the pre-test to the immediate post-test (1.48 vs. 1.87, respectively), which was statistically significant ($p = .00$). However, the scores from immediate post-test to delayed post-test (1.87 vs. 1.86, respectively) did not change statistically significantly ($p = 1.00$). Therefore, we can conclude that the grammatical complexity scores improved significantly after the treatment; however, it remained relatively constant after a month.

In order for comparing the participants' pre-test, immediate post-test, and delayed post-test in terms of the participants' lexical complexity scores a repeated-measures ANOVA with a Greenhouse-Geisser correction (to adjust the lack of sphericity) was conducted which showed that mean lexical complexity scores differed statistically significantly between pre-test, immediate post-test, and delayed post-test ($F (1.27, 30.70) = 32.51, p < 0.00$).

As depicted in Table 5, Post hoc test using the Bonferroni correction (to adjust the lack of sphericity) revealed that the lexical complexity scores have elicited a sharp increase from the pre-test to the immediate post-test (.64 vs. .70, respectively), which was statistically significant ($p = .00$). However, the scores from immediate post-test to delayed post-test (.70 vs. .69, respectively) did not change statistically significantly ($p = 1.00$). Therefore, we can conclude that the lexical complexity scores improved significantly after the treatment; however, it remained relatively constant after a month.

Table 4

Post-hoc Test for the Grammatical Complexity Scores

(I) Complexity	(J) Complexity	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
PRE	IP	-.39[*]	.04	.00	-.49	-.28
	DP	-.37[*]	.03	.00	-.47	-.28
IP	PRE	.39[*]	.04	.00	.28	.49
	DP	.01	.02	1.00	-.04	.07
DP	PRE	.37[*]	.03	.00	.28	.47
	IP	-.01	.02	1.00	-.07	.04

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Table 5

Post-hoc Test for the Lexical Complexity Scores

(I) Lexical	(J) Lexical	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
PRE	IP	-.05[*]	.00	.00	-.07	-.03
	DP	-.05[*]	.00	.00	-.07	-.02
IP	PRE	.05[*]	.00	.00	.03	.07
	DP	.00	.00	1.00	-.00	.01
DP	PRE	.05[*]	.00	.00	.02	.07
	IP	-.00	.00	1.00	-.01	.00

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

The second research question sought to investigate the attitude of the participants toward Scaffolded WCF. The descriptive statistics obtained from the administered 17-item Likert-scale questionnaire is presented below under the three categories of 'affective factors', 'linguistic factors', and

'applicability factors'. The respondents had to indicate their attitude by choosing from the four options of Strongly Disagree (1), Disagree (2), Agree (3), and Strongly Agree (4). The data from negatively-worded items were inserted reversely.

As Figure 2 shows, the participants' response to the six items under the category of Affective Factors (i.e. items 1, 2, 14, 15, 16, and 16), generally, indicates a positive attitude toward the adopted method (i.e. 3.16, 3, 2.76, 2.56, 2.72, and 3.24 respectively) with the total mean of 2.90.

Figure 2

The Participants' Attitude toward Scaffolded WCF (Affective Factors)

Figure 3 illustrates the participants' responses to the seven items under the category of Linguistic Factors (i.e. items 3, 4, 5, 6, 7, 8, and 9). The figure indicates a highly positive attitude toward the adopted method (i.e. 3.16, 3.12, 3.4, 3.24, 3.32, 3.16, and 3.08 respectively) with the total mean of 3.21.

Figure 3

The Participants' Attitude toward Scaffolded WCF (Linguistic Factors)

As Figure 4 depicts, the participants' response to the four items under

the category of Applicability Factors (i.e. items 10, 11, 12, and 13), generally, indicates a positive attitude toward the adopted method (i.e. 3.08, 3.16, 2.24, and 2.84 respectively) with the total mean of 2.83.

Figure 4

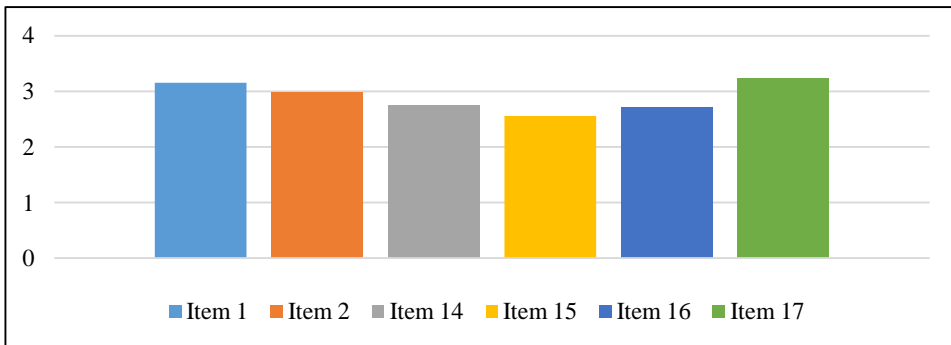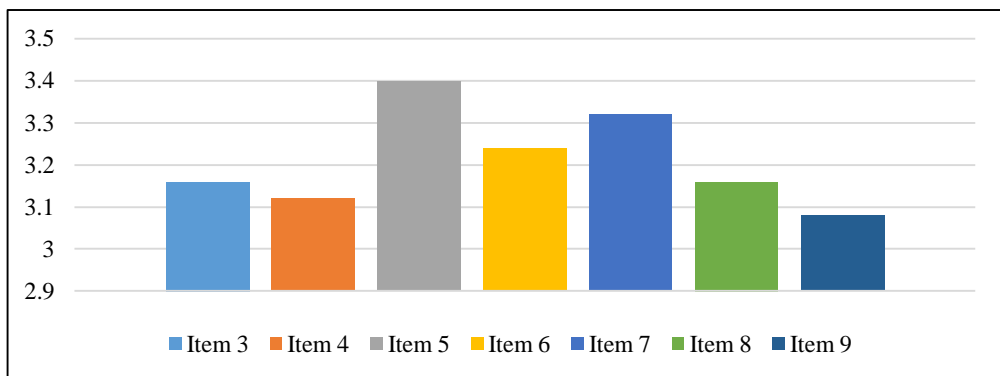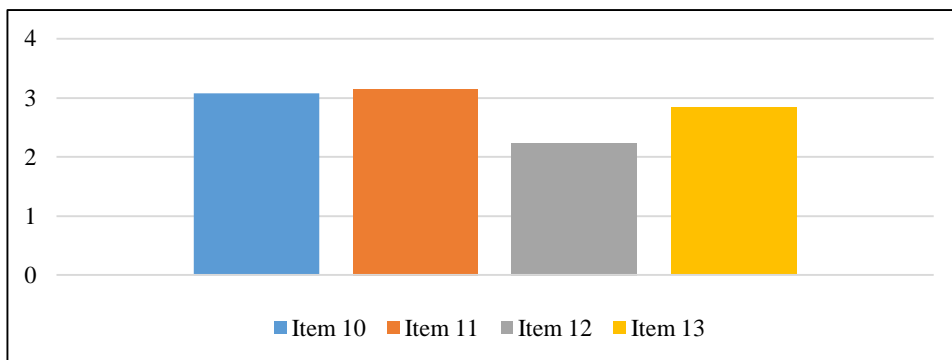*The Participants' Attitude toward Scaffolded WCF (Applicability Factors)*

Figure 5

The Participants' Attitude toward Scaffolded WCF (Comparison of the Three Factors)
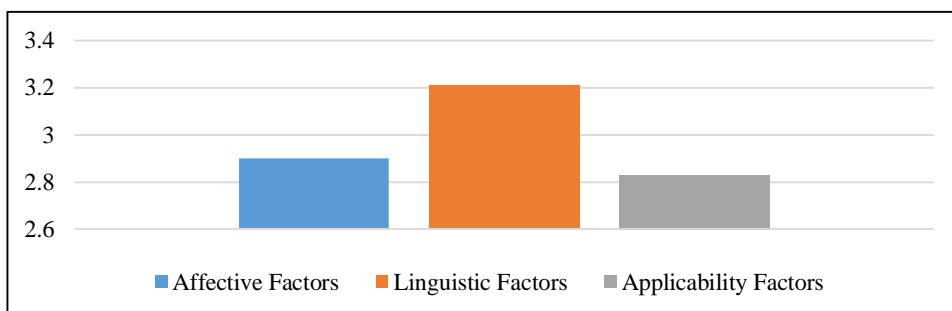
4.2. Discussion

The first research question investigated the efficacy of Scaffolded WCF on the participants' writing quality in terms of fluency, grammatical accuracy, grammatical complexity, and lexical complexity. As the analysis of data indicates, the student writers demonstrated significant improvements in the aforementioned aspects over the course of the treatment; however, results did not improve significantly during the one-month period after the immediate posttest. This finding indicates that intervention in the form of

Scaffolded WCF crucially contributes to the learners' writing improvements and the learning is sustainable at least for a month after the treatment. Findings regarding the impact of Scaffolded WCF on the participants' grammatical accuracy are in line with those of studies by Nassaji and Swain (2000), and Nassaji (2011). Nevertheless, in these studies, accuracy has been measured subjectively, unlike the present study where the construct was measured objectively through counting the error-free T-units.

Studies evaluating the writing quality in terms of fluency, grammatical accuracy, grammatical complexity, and lexical complexity are in short supply and no research study has investigated the efficacy of Scaffolded WCF from this perspective. One main reason for the paucity of research is the multiplicity of formulae used for calculating these features. The most controversial one of these four aspects is writing fluency. Some scholars (Sasaki, 2000; Baba, 2009) associate it with composition rate (number of words written in a certain time slot); while others (Storch, 2009; Johnson et al., 2012) affiliate writing fluency with the length of the stretches of discourse. The former definition equates writing fluency with shorthand writing. We believe that these researchers do not make a distinction between the concept of fluency in written and spoken language. However, these two forms of language are essentially different in nature as writing is less spontaneous. In the present study, fluency in writing refers to the average number of words per T-unit.

The findings are also in conformity with those of Merkel (2018) which indicated that dialogic scaffolding facilitated the revisions through heightening the awareness of the audience and providing a channel to clarify the challenging issues regarding L2 writing. Similar findings are reiterated in Rassaei's (in press, p.23) study where he found that graduated negotiated WCF is significantly more effective than explicit feedback "unilaterally provided by a teacher". However, in these studies, unlike the present study, the Scaffolded feedback provider was the tutor and no peer feedback was provided.

The second research question investigated the attitude of the learners toward the adoption of Scaffolded WCF in the writing classroom. To answer this question, a 17-item questionnaire was devised. The items in the questionnaire were categorized into three different factors: affective, linguistic, and applicability.

The affective factor is basically concerned with how the learners felt about the adopted method and whether they were comfortable with it. The linguistic factor focused on the degree to which learners perceived the method as an effective way to improve their writing quality. The applicability

factor, on the other hand, dealt with how easy or manageable the whole process was for the learners.

The learners' responses with respect to the items under the affective factor revealed that learners were comfortable with this alternative WCF method as they stated that the adopted method increased their confidence with identifying their problematic areas and alleviating those problems. They also mentioned that they enjoyed the peer-review phase as they had to communicate with their classmates and they felt they were in the same boat. Therefore, they claimed they did not feel lonely during the process and they felt good that there were other people who cared about their success. A little fewer than half of the learners, however, felt that the process was too time-consuming and some voiced their frustration with the gradual process of the provision of WCF in this method as they were used to direct on-the-spot correction. Overall, the learners expressed that they would continue with the method in the future.

The respondents' answers to the items under the linguistic factor indicated that Scaffolded WCF significantly contributed to the improvement of their writings in terms of organization, content, grammar, vocabulary, and mechanics. This is completely in line with the results obtained from the learners' writings in the posttest as well as the delayed posttest.

With respect to the applicability of Scaffolded WCF, the learners' responses showed that they were not confused by the peer comments and they knew how and did implement their classmates' comments in their second draft. However, they expressed their reservations about the accuracy of the peer comments. This reservation had been echoed in previous studies (Vaezi & Abbaspour, 2015) and this was for the same reason that the peer-review phase was complimented by a teacher-feedback phase.

The results from the post-interviews also confirm this generally positive attitude toward the efficacy of this method. Some learners stated that this innovative method generated motivation among them and encouraged them to write better paragraphs. Many claimed that multiple-drafting played a crucial role in improving their writing skills as it drew their attention to their mistakes and ways they could correct them. In addition, most participants stated that the provision of corrective feedback in a step-by-step fashion (in terms of explicitness) allowed them to reflect on their errors and learn from them. Regarding the peer review phase, most learners believed that reading other students' paragraphs helped them learn from one another's mistakes.

However, many participants indicated that the peer comments are sometimes inaccurate and in some instances even misleading. They believed that they could benefit from peer comments only if they are provided by more

knowledgeable students. Some students also stated that the lengthy process of multiple-drafting was too time-consuming and boring.

Overall, the overwhelming majority of the learners participating in the study stated that they had found Scaffolded WCF beneficial; however, they still had some uncertainty regarding the comments they received from their peers.

The results of this study can also be taken into consideration from another perspective. Feuerstein and his colleagues (Feuerstein et al., 2010; Feuerstein & Feuerstein, 1991; Feuerstein et al., 1980; Feuerstein et al., 1988;), advocating interactionist dynamic assessment, have developed an approach to assessment known as the Mediated Learning Experience, or MLE. The MLE is deep-rooted in Feuerstein's theory of structural cognitive modifiability, which to a great extent resembles Vygotsky's concept of the Zone of Proximal Development. Accordingly, human beings are open systems, meaning that human cognitive capabilities are not tenacious features like biological traits such as eye color which are actuated by genetics. Rather, these features are determined and developed through interaction with other people and instruction. Feuerstein posits that, contrary to many educational systems, the status quo of the learners' performance is not predictive of their future functioning as a powerful intervention can dramatically influence the learners' performance (Lantolf & Thorne, 2006). This claim is traceable in the qualitative phase of the present study. The majority of the participants, in the post-interview sessions, indicated that they learned a lot of points from the teacher/peer commentaries to use in the future (e.g., grammatical points, punctuation marks, etc.).

Mediated Learning Experience is "a process through which environmental stimuli do not impact directly on the organism but are filtered through some other person" (Feuerstein et al., 1988, p.56). This person is normally an adult who mediates in the learning process through selecting, framing, modifying and imposing an order on the received input. Feuerstein and Feuerstein (1991) also mention other components of the MLE, including intentionality, reciprocity, and transcendence that are directly pertinent to the current study.

In short, the component of intentionality attributes to the intentional measures made by an adult in order to mediate a child's activities. This mediation is neither incidental nor random. In this study, the teacher mediated the students' writing by giving them feedback. Providing the students with feedback was not haphazard but intentional and planned. The second component is reciprocity. It describes learner/mediator interaction as essentially interconnected. In an MLE episode, the learner does not receive

the knowledge passively, but actively co-constructs the knowledge. After receiving the feedback, the students were required to co-construct what the teacher/peers meant and reconstruct the erroneous part of their writing. Thus, it can be concluded that there was a mutual interaction between teacher/peer feedback and the students' revisions.

Transcendence is the third component. It refers to the objective of the MLE, which is fostering the cognitive development necessary for transcending the learning beyond the learners' status quo in relation to a certain activity. This is why the MLE normally advances from the incipient training stage on a given task to undertaking "a series of tasks that represent progressively more complex modifications of the original training task" (Feuerstein et al., 1988, p.92). The 'status quo' is the present students' writings and the present state of students' knowledge of grammar, vocabulary, mechanics of writing, coherence, etc. The received feedback facilitates the students' movement from this stage to a higher one. For instance, when the feedback asked the student about a punctuation mark and its correct usage, the student would refer to different sources and use various mediated strategies to find the answer and eventually revise the erroneous element. Hence, it can be concluded that the revision of the very part is, hopefully, related not only to the present writings but also to all of their future writings which is an evidence of transfer of learning.

5. Conclusion and Implications

The present study intended to investigate the efficacy of Scaffolded WCF provided in the learners' Zone of Proximal Development on the learners' writing quality in terms of fluency, grammatical accuracy, grammatical complexity, and lexical complexity. The results indicated that the participants made significant gains in all four aspects which in turn, give support for the adoption of Scaffolded WCF in large classrooms typical of college writing courses. However, it was revealed that instructors need to raise awareness of the benefits of peer feedback sessions so they can reduce the students' uncertainty about the peer feedback they receive.

Optimal cooperation between teachers and student writers can be achieved through "communicating their intents, needs, difficulties, and successes" (Goldstein, 2004, p.68). Therefore, communication must incorporate teacher-student as well as student-student negotiation of form and meaning. This can be materialized through a combination of teacher and peer scaffolding. Such assistance which is provided in the learner's ZPD can significantly help them with their writing performance and at the same time allay their writing apprehension.

One of the major problems with using scaffolding techniques in large language writing classrooms is that this undertaking puts an overwhelming burden on the instructors. The students also consider the painstakingly slow process of feedback provision boring. The method proposed in this study, however, has made the process much more manageable for the teachers via division of labor and has also made it more learner-friendly by simplifying Aljaafreh and Lantolf's (1994) 13-stage regulatory scale. Prior to this, for the same aforementioned reason, most studies investigating the efficacy of scaffolded or negotiated WCF were conducted in laboratory settings only focusing on two or three students. However, real-life writing classrooms, especially university-level ones, are typically crowded and implementation of such an intricate feedback provision technique is virtually impossible.

Further studies may evaluate this approach in different educational settings with beginner or more advanced students. Attention may also be directed at peer feedback groupings to see how high-achiever and under-achiever students benefit from the adopted approach. One of the limitations of the study was the limited number of the participants which lowers the external validity of the findings. For this same reason, the instrument (the attitude questionnaire) could not be construct validated. Thus, it is recommended that further research be conducted with a larger sample size to eliminate the aforementioned caveat.

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Appendix A

Excerpt 1: Transcribed peer feedback episode on the content

S1 (Student 1): Your topic sentence is a little confusing to me.   Just a little.

S2 (Student 2): Yeah, I have written that downloading a track   of music and a movie is considered as a   common way of having the latest ones as soon   as they are released. I mean that this is the   easiest   way   to have the latest music and movie   without any effort.

S1:   So you mean every new music and movie that   coming   to market different people can   download them.

S2:   Yeah, yeah.

S1:   But why do you think it is a good idea that they   do that. In my writing I mentioned that it is…

S2:   No, no I didn't mean it is a good idea to   download   them illegally. I mean it is common.   It is not something unusual that if you do it you   will be criticized by others.

S1:   But if everyone downloads…

S2:   This is about works from other countries. But   artists   in   your country need the money.

S1:   OK, OK [laughing].

Excerpt 2: Transcribed peer feedback episode on the form

S1 (Student 1): Why did you underline this word? I think is   correct.

S2 (Student 2): No. Because you said "many people usually downloading music form the Net." The verb is   not correct.

S1:   Mmm. Downloading? Can you explain?

S2:   Downloading means right now not usually.   You   need   simple present.

S1:   OK. You mean download?

S2:   Yes, people usually download.

Excerpt 3: Transcribed teacher feedback episode on the form

S (Student):   Excuse me, here you underlined "need". Why?

I (Instructor):   You have written "each person need an   enjoyable vacation."

What is the subject in this sentence?

S: Mmm. Person.

I: Actually it is "each person".

S: Yes.

I: Is "each person" singular or plural?

S: Singular?

I: Yes. Therefore, you need to use the appropriate   verb   for   a singular subject.

S: So, "each person needs". Right?

I: Yes. Whenever we have "each person",   "everyone",   and "everybody" we have to use   singular verbs.

Excerpt 4: Transcribed whole-class conferencing by the instructor

I have noticed that many of you don't use comma correctly or don't use it when you have to. For example, when you begin your sentences with an adverb such as "finally" or "additionally", you need to add a comma after them. Look at these examples …

Appendix B

Questionnaire for the learners' attitude toward Scaffolded Written Corrective Feedback

Please read the following statements carefully and choose the item that matches your level of agreement.

1. By reading my classmates' writings, I have developed greater confidence in identifying the weaknesses or problem areas in a paragraph.

Strongly Agree   Agree   Disagree   Strongly Disagree

2. I enjoy commenting on my classmates' writings.

Strongly Agree   Agree   Disagree   Strongly Disagree

3. It helps me to write better paragraphs by reading my classmates' writings.

Strongly Agree   Agree   Disagree   Strongly Disagree

4. It was helpful to hear my classmates' comments on my writing assignments.

Strongly Agree   Agree   Disagree   Strongly Disagree

5. This type of feedback helped me to better organize my paragraphs.

Strongly Agree   Agree   Disagree   Strongly Disagree

6. This type of feedback helped me to express my ideas more clearly.

Strongly Agree   Agree   Disagree   Strongly Disagree

7. This type of feedback helped me with using correct grammatical structures.

Strongly Agree   Agree   Disagree   Strongly Disagree

8. This type of feedback helped me with using more effective words.

Strongly Agree   Agree   Disagree   Strongly Disagree

9. This type of feedback helped me with correct use of mechanics conventions.

Strongly Agree   Agree   Disagree   Strongly Disagree

10. After receiving the comments on my writing, I knew how to correct the points or areas of weaknesses.

Strongly Agree   Agree   Disagree   Strongly Disagree

11. I considered my classmates' feedback when I wrote the second draft.

Strongly Agree   Agree   Disagree   Strongly Disagree

12. Accuracy of classmates' comments cannot be trusted.

Strongly Agree   Agree   Disagree   Strongly Disagree

13. Written comments by other students are confusing.

Strongly Agree   Agree   Disagree   Strongly Disagree

14. It is NOT a good feeling when my classmates correct my errors.

Strongly Agree   Agree   Disagree   Strongly Disagree

15. The whole process is too time-consuming.

Strongly Agree   Agree   Disagree   Strongly Disagree

16. It is frustrating that the teacher and my classmates do not provide me with direct feedback immediately.

Strongly Agree   Agree   Disagree   Strongly Disagree

17. I would like to continue this method in the future.

Strongly Agree   Agree   Disagree   Strongly Disagree