Impact of Direct Corrective Feedback (DCF) Through Electronic Portfolio (EP) Platform on the components of Iranian EFL Learners' Writing across Levels of Language Proficiency

Rajab Esfandiari
Assistant Professor
Imam Khomeini International University
esfandiari@hum.ikiu.ac.ir

Hussein Meihami[*]
PhD Candidate
Shiraz University
hussein.meihami@yahoo.com

Abstract

While some researchers have questioned the efficacy of corrective feedback (CF), other researchers believe that CF can be effective if implemented through new technology types, including e-portfolio (EP). However, whether EP can be used as a medium of providing CF for language learners at different levels of language proficiency is still unknown. The purpose of the present study, therefore, was twofold: (a) to examine the writing performance of EFL learners across three levels of language proficiency receiving direct corrective feedback (DCF) via EP, and (b) to investigate which language proficiency group benefits more from DCF provided via EP. For the purposes of the present study, sixty (60) Iranian EFL learners who were divided into three levels of language proficiency at Sharif language center in Tehran, Iran participated in this study. The results of data analysis showed statistically significant differences for two components of writing—content, and mechanics—between beginning and intermediate, and beginning and advanced language learners. The results also showed that the higher the language proficiency level of language learners, the more they benefit from the provision of DCF through EP. These findings suggest that EP may be a viable option to supply Iranian EFL learners across levels of language

proficiency with DCF. The article concludes with a call for testing the threshold-level hypothesis that may exist for language learners to use EP.

Keywords: direct corrective feedback, e-portfolio, proficiency level, threshold level

Recent years in Applied Linguistics have witnessed an ongoing debate over whether second language (L2) learners should be provided with corrective feedback (CF) (Ferris, Lin, Sinha, & Senna, 2013). On the one hand, the opponents of CF, notably, Truscott (1996, 1999, 2004, 2007) argue that studies on CF suffer from theoretical problems. Truscott (1996), for example, claimed that when CF is provided, information is merely conveyed from teachers to students. Truscott also questioned teachers' capability to provide CF and students' willingness to use it. On the other hand, the proponents of CF firmly believe that CF improves students' writing performance (Ferris, 1999, 2002, 2004). Ferris (2002), for example, pointed out that results from CF studies are inconclusive, and conclusions are "premature" because such studies are methodologically flawed. Similarly, Guénette (2008) concluded that CF studies "are not necessarily comparable because the design and methodology were not constant" (p. 51). Therefore, the major issue does not concern the provision of CF, but it relates to how researchers have conducted research to evaluate the effect of CF.

Another debatable point relates to the type of CF: Direct corrective feedback (DCF) versus indirect corrective feedback (IDF) (Chandler, 2003; Ferris, Brown, Liu, & Stine, 2011; Ferris, Liu, & Rabie, 2011; Lee, 2008; Montgomery & Baker, 2007). Van Beuningen, De Jong, and Kuiken (2008) stated that "while indirect corrective feedback only consists of an indication of an error (i.e., by underlying the error or providing an error code), direct error correction identifies both the error and the target form" (p. 282). Studies on DCF and ICF have yielded mixed results. Ferris's (1995) study showed that L2 learners benefited more from ICF than DCF because, as she argued, the participants in her research revised their errors. Other studies (e.g., Chandler,

2003; Ferris, Chaney, Komura, Roberts, & McKee, 2000), however, have shown that DCF contributes to more accurate L2 production. Some researchers (e.g., Frantzen, 1995; Robb, Ross, & Shortreed, 1986) have reported that DCF and ICF could be equally effective in improving L2 writing performance.

To provide more efficient CF, some researchers have proposed alternative methods (Chapelle, 2001; Hegelheimer & Tower, 2004; Pica, 1994; Nassaji, 2007; Saeedi & Meihami, 2015; Saeedi, Meihami & Husseini, 2014; Shiotsu & Weir, 2007; Tahriri, Hassaskhah, Mozafarian, 2015). Computer-assisted language learning (CALL) is a platform through which CF can be provided. CALL offers many advantages. Stockwell (2007) asserted that, since 2000, researchers had used CALL to develop listening, reading, writing, and speaking materials to serve L2 learners. The other additional benefits of CALL in language teaching and learning include turning teacher-fronted classes to learner-centred classes (Castro Sánchez & Alemán, 2011), creating conditions for teachers to raise students' consciousness (Brush, Glazewski, & Hew, 2008), helping L2 learners better understand learning processes (Chai, Koh, & Tsai, 2010), promoting collaborative learning (Hassaskhah, J., & Sharifi; Koc, 2005), and developing critical thinking skills (Levin & Wadmany 2006; McMahon, 2009).

Researchers have used different technology types to assess the effect of feedback types on different dimensions of language learners' abilities. However, to date, no study has focused on examining the provision of DCF via electronic portfolio (EP) platform across proficiency levels in an EFL setting. The present study was, therefore, aimed at providing Iranian EFL learners across three proficiency levels with DCF via a more recent platform on five components of writing.

Literature Review

Researchers are employing more recent online technology types to deliver feedback to language learners (e.g., Xu & Peng, 2017). Compared to traditional methods of providing feedback, these more recent platforms are more sophisticated and could be both synchronous and asynchronous (e.g., Golonka, Bowles, Frank, Richardson, & Freynik, 2014). One mode of feedback delivery, EP platform is proving promising. In this part, first, a brief account of technology-provided feedback is given. Next, EP platform is introduced, defined, and elaborated on. Third, empirical studies using EP feedback are presented. Finally, the rationale for the present study is provided.

CALL-provided CF is supported by interaction hypothesis and cognitive theories. Long's (1996) interaction hypothesis posits that form and meaning can be negotiated between teachers and students, using clarification requests, recasts, and other feedback types. CALL creates favorable conditions for teachers and students to interact with each other either concurrently or at different times to negotiate form such as lexical and grammatical errors (Fiori, 2005; Salaberry, 2000; Smith, 2003; Sotillo, 2000). Cognitive theories focus on deep learning, integrative, self-directive learning, and life-long learning (Combrige, 2004; Thang, Lee & Zulkifli, 2012; Thong et al. 2012). In Garrett's (1991) words, "the individual student's own hypotheses have to be *actively* [italics added] tested" (p. 92). This idea "remains one of the theoretically important aspects of SLA where CALL offers great promise" (Chapelle, 2009, p. 743).

EP has been very recently used as a new platform to provide language learners with CF. As a direct descendant of portfolio, EP is defined as "a purposeful collection of students' work that is made available on the World Wide Web or recordable CD Rom" (Kahtani, 1999, p. 262). Although it is one of the most frequently cited definitions in the field, this definition may no longer be useful due to the emergence of more recent types of technology and "rapid development from paper to electronic portfolios that has been pushed

by various Web2 [and recently Web3] applications" (Himpsl-Gutermann & Baumgartner, 2010; p. 19). In an attempt to define EP, addressing new developments in CALL, Lorenzo and Ittelson (2005) regarded EP as "a digitized collection of artifacts including demonstrations, resources, and accomplishments that represent an individual, group, or institution" (p. 2).

Using EP to supply feedback may offer some advantages. EP platforms empower language learners and language teachers. For example, Peters, Chevrier, LeBlanc, Fortin, and Malette (2006) found that learners and teachers have positive attitudes toward EP platforms because these platforms help them reflect on their learning and teaching. In like manner, Hackmann and Alsbury (2005) found that language learners may reflect on their learning when using EP. Moreover, EP platforms may contribute to learner autonomy. Chau and Cheng (2010) explored the extent to which EP has potential to develop autonomy among language learners. The findings of their study revealed that using EP helped language learners to feel a sense of ownership and take responsibility for their learning.

Many researchers have examined the effect of various types of technology on L2 writing performance (see Kam, Tang, & Lee 2016; Shintani, 2016; VanKooten, & Berkley, 2016, for more recent discussion). For example, using a mixed-methods study, Guénette and Lyster (2013) analyzed the corrective feedback types that 15 pre-service English as a second language (ESL) high school teachers in Canada used when they commented on the 238 texts that 52 high school ESL learners emailed to the teachers during a school semester. The findings showed that although the pre-service teachers used a variety of CF types, they predominately used direct correction strategies to comment on the texts. For instance, "more than 70% of all errors flagged by the tutors were treated through direct corrections" (p.146). Recognizing the limitations of their study and considering the qualitative results, Guénette and Lyster concluded that "it appears that providing CF is intrinsically challenging for L2 teachers, irrespective of their training, experience, geographical

location, and classroom context" (p.149). When Guénette (2012) analyzed the responses of in-service ESL teachers on ESL learners' e-mails, she also found that in-service teachers preferred direct feedback to comment on the learners' emailed texts.

Although some researchers in SLA have examined the effect of CF on proficiency levels of language learners (see Guénette, 2008, 2012), few researchers have investigated the efficacy of EP in writing performance among EFL learners at different levels of language proficiency. Key findings from research on EP as a platform to provide CF among L2 learners are summarised in the following paragraphs.

Baturay and Daloglu (2010) analyzed the writing performance of 59 elementary language learners assigned into an EP assessment experimental group (N = 29) and traditional portfolio control group (N = 29) in an EFL setting in Turkey. The EP assessment experimental group was asked to choose one of the writing tasks and write an essay on it. They were required to self-assess their essays, using an analytic scale through EP. Traditional portfolio control group, however, used the conventional face-to-face procedure to do the assessment. Although the findings did not show any statistically significant difference between the experimental group and control group, Baturay and Daloglu argued that EP might be a "practical alternative to standardized testing" (p.426).

Similarly, Erice and Ertas (2011) used the traditional portfolio procedures and EP to provide two groups of Turkish language learners with DCF. Erics and Ertas found the team receiving DCF through EP outperformed the group receiving DCF through traditional portfolio on a writing posttest. They concluded that using EP to provide DCF offers the "advantages of easiness to carry, share and save; instant access; immediate feedback; reader and reviewer variety and so forth" (p. 91).

Using EP to examine the cognitive load and perceptions of 49 graduate students in a Western university, in an ESL context, Shepherd, and Bolligers

(2011) reported that using EP promoted collaborative learning among language learners, enabled them to share knowledge of writing with each other and use the shared experience, and contributed to improving their writing performance. However, the results did not show any increase in language learners' cognitive load.

The examination of the above review of the literature reveals the following points. First, the investigation of the effectiveness of EP across proficiency levels has yielded mixed results. The present researchers were, however, unable to locate studies in which EP was used to provide CF on writing performance of language learners at different levels of language proficiency. Second, previous studies did not examine the provision of DCF via EP among language learners in an EFL setting. Finally, little information is known about which proficiency group—beginning, intermediate, and advanced language learners—benefits from the provision of DCF via EP. Therefore, in this study, it was attempted to examine how Iranian language learners with varying degrees of language proficiency may differ on components of writing (content, organization, language use, vocabulary, and mechanics) when they were provided with DCF via EP. The researchers were also interested in knowing which proficiency group benefited from DCF.

In the present study, a new platform, DOKES, was used to deliver DCF to students. DOKES allows students and teachers to interact with each other, and it may prove promising for pedagogical purposes. This is a methodological contribution which may have the potential to be incorporated into language classes. The following research question, therefore, was posed to focus this study on.

Is there any significant difference in components of writing among Iranian language learners when they receive DCF via EP? If so, which proficiency group performs better?

Method

Participants

Initially, eighty-six (86) Iranian EFL male and female language learners between the ages of 18 and 24 participated in this study. Language learners included university students, who attended English conversation classes at Sharif Language Center, Tehran, Iran. Using Preliminary English Test (PET) and TOEFL paper-based test, 60 students were selected and divided into Beginning Group ($N = 20$, Intermediate Group ($N = 20$), and Advanced Group ($N = 20$). Following the procedures set by Phakiti (2003), in this study the language learners who obtained 70% of total scores were classified as advanced group, those scoring between 46% and 69% were identified as intermediate group, and those whose scores were below 45% were grouped as beginning group. The language learners, then, were assigned into three writing classes in which they were provided with DCF through EP.

Table 1.

Characteristics of Language Learners

Gender		Male (*N* = 25)			Female (*N* = 35)		
		Beginning N = 10	Intermediate N = 7	Advanced N = 8	Beginning N = 10	Intermediate N = 13	Advanced N = 12
Age	Mean	22.66	20.33	22.16	22	21	24
	SD	3.51	2.51	4.13	2	3.78	3.46
Years of studying English	Mean	1.22	1.66	2.50	1.33	1.83	2.83
	SD	.81	.51	.54	.51	.75	.75
Highest Degree Completed	High school	60%	35%	25%	55%	50%	35%
	AA	30%	-	20%	-	15%	15%
	BA	10%	55%	55%	40%	35%	40%
	MA	-	10%	-	5%	-	10%

Note. AA = Associate of Art. BA = Bachelor of Art. MA = Master of Art.

Instructional materials

Since language learners were at three different levels of language proficiency, we chose Blanton's (2008) *step-by-step writing book (1-3): A standards-based approach*. The rationale behind this selection was twofold. First, this series was primarily written for language learners at different levels of language proficiency. Second, the series covered components of writing, including grammar, vocabulary, content, organization, and mechanics.

Instruments

Rating scale. In this study, language learners were required to write a three-hundred-word argumentative essay on the following topic: Would you prefer to have a dangerous job with a high income or a soft one with a low income? The reasons for choosing this issue were due to the following reasons. First, the topic had to be best suited for three groups of language learners because they were university students majoring in different fields of study to control for topical knowledge, so this topic better served the purposes of the present study. Second, the argument was based on the contents they were taught during treatment sessions. The primary goal was to further students' knowledge of classroom skills (Read & Kroll, 1995), so the choice of the topic was motivated by achievement purposes, helping participants in the present study to apply what they were instructed in treatment sessions.

Language learners were supposed to write on the above topic after they had received writing instruction for ten sessions. The framework used in this study was that of Blanton's (2008) standards-based approach, which presented point-by-point instructions, exercises, and follow-up writing activities to participants. One week after the tenth session, they sat a 50-minute exam to write a new essay on the above topic. They were provided with sufficient instructions about how to respond to the task and how their essays were to be rated on a 5-point rating scale using five main criteria—content, organization, vocabulary, mechanics, and language use, with content receiving the highest rating and mechanics the lowest score.

Jacobs, Zinkgraf, Wormuth, Hartfiel, and Hughey's (1981) ESL Composition Profile was used to rate language learners' essays. This analytic rating scale includes five components of writing: Content, organization, language use, vocabulary, and mechanics. For each element, Jacobs et al. added some descriptors to help raters rate essays objectively (see Appendix A for more information about this scale).

The components were differentially weighted to emphasize first content (30 points), followed by language use (25 points), with organization and vocabulary equally weighted (20 points), and mechanics receiving minimal emphasis (5 points) (Weigle, 2002). It is not, however, clear how those five components were differentially weighted. Kondo-Brown (2002), for example, very explicitly stated that "it is not clear how the weightings were determined in the original version, and some researchers have questioned the assignment of different weights to evaluation criteria" (p. 9).

Electronic Portfolio Platform (EP Platform). *DOKEOS* was chosen to provide language learners with DCF. *DOKEOS* was easily accessible at the time of doing this study at *www.dokeos.com*. *DOKEOS* is regularly updated online. The version used in the present study is a hybrid e-portfolio (synchronous and asynchronous) and possesses some new features, including its user-friendly environment and the capability of being connected to all other electronic devices and platforms. In addition to these features, *DOKEOS* enables researchers to supply language learners with instructional materials; to notify them of any change in the program, including date of submitting essays; and to help language learners to customise their EP. Using *DOKEOS* can also help language learners access Wiki so that they can search the Internet.

DOKEOS is very versatile, including so many options which enabled us to receive language learners' essays electronically, comment on them, and deliver the commented essays to language learners for revisions. DOKEOS is capable of being connected to e-mails, so in the present study, when language learners sent the lead researcher an essay, an e-mail was sent back to notify them of the receipt of their composition. Similarly, when their essays

were commented on and were sent to them via DOKEOS, they were informed of the file via their e-mails so that they would be able to visit DOKEOS and make necessary revisions.

Figure 1 is a screenshot of DOKEOS which helps the reader better understand the various options it has.

Figure 1. A screenshot of DOKEOS

Language learners' knowledge of computer. Before the study began, the lead researcher interviewed Iranian EFL learners, asking them some simple questions to ensure they would own a computer, have access to the Internet, and know how to search for the information on the Internet. The results of interview analysis showed that Iranian EFL learners owned either a personal computer or a laptop at home, spent two hours on average a day surfing the Net, used social networks such as Telegram, and knew how to use computers.

Procedures

Instruction on EP Platform. During the first session of the study, the lead researcher trained Iranian EFL learners to use *DOKEOS*. He used the Internet in the class to show how to use *DOKEOS* step by step. To make sure language learners understood the procedures, the lead researcher asked language learners to volunteer to create EP Platform, using *DOKEOS.* The lead researcher gave language learners an e-mail address so that they would communicate to him the problems in running *DOKEOS*. He also gave them a five-page booklet to more familiarise them with *DOKEOS*.

Writing Instruction. Having been trained, language learners attended a10-session writing programme held twice a week for two months and a half. Each session lasted for one hour and a half. During each session, the lead researcher spent forty-five minutes teaching language learners content, organization, grammar, vocabulary, and mechanics, using step by step series. Table 2 shows the details of what was taught in each session. During the second forty-five minutes, language learners did exercises on components of writing. The practices were primarily educational, with the teacher presenting explanations to students first, directing their attention to the tasks and asking them to do the next. While busy doing them, them teacher monitored their progress, asking them to share answers with their classmates and discuss vague points with their teacher. This way of presenting and doing exercises is consistent with participatory methodology, which posits that knowledge and notions of effective instruction are socially co-constructed through interactive dialogues between teachers and students (Berlin, 2005). Participants practiced writing descriptive, expository, and argumentative essays during treatment sessions.

Language learners were also required to write a 300-word essay in each session and submit it to the lead researcher via *DOKEOS*. The lead researcher commented on the essays at home and returned them to language learners.

Language learners had to revise and resubmit the second draft of their essays within 24 hours. The lead researcher provided DCF on the second selection of the essays and returned them to language learners, asking them to apply DCF and resubmit the third draft of their essays prior to the next class session.

Table 2.

The Points for Treatment during Sessions in the Present Study

Components	Sessions 1-2	Sessions 3-4	Sessions 5-6	Sessions 7-8	Sessions 9-10
Content	Development of thesis	Thematic development	Topical and general knowledge	Relevancy in writing	How much detailed?
Organization	Chronological order: organize with sequence words	Main Idea and Supporting Details: organize sentences	Order of Importance: Organize by priority	Expository Report: Organize informational text	Analyzing Strengths and Weaknesses: organize by positive and negative qualities
Grammar	Review of simple verb tenses adverbs of frequency	Imperative sentences modals: can, should, must	Complex sentences with because and when	Parallel Structure	Complex compound
Vocabulary	Daily activities Time Expressions	Noun for place Direction verbs and phrases	Conflicts words Environmental words	Literary analysis words	Word to describe changes
Mechanics	Comma (,)	Comma Splice	Semicolon, colon, slash, etc.	The quotation mark	Review

This study lasted for ten sessions, including eight treatment sessions and two test sessions (first meeting as the placement session and tenth session as the posttest). During the eight treatment sessions, the language learners wrote six essays, which were provided with DCF through DOKEOS. The topics they wrote those essays about were general topics selected from the instructional

book used in this study (step-by-step writing book (1-3): A standards-based approach by Blanton (2008).

Providing DCF. In this study, we followed the principles of DCF to comment on language learners' essays. As Bitchener and Knoch (2008) stated, these principles include crossing out the unnecessary words/phrases, the insertion of missing words/phrases, or the provision of correct forms. *DOKEOS* enabled us to apply these principles. In the following five subsections, it is attempted to describe how DOKEOS was used to provide DCF on different components of language learners' essays.

DCF on content. In this study, content includes "knowledge of subject, development of thesis, coverage of topic, and relevance of details" (Shehadeh, 2011, p. 291). Using DOKEOS, the lead researcher supplied the following DCF on one of language learners' essays. The topic of the essay during treatment sessions was "benefits of playing sports."

> **Student's Essay (intermediate level):** *I am playing football. Football is the best sports in the world. World cup 2014 was finished last month. Mesi is the best football player, and I like him. Competition helps us to make money....*
>
> **Lead researcher's DCF:** *Try to stick to the topic. Your essay has covered a range of ideas, but the thesis statement is not explicitly stated. You may start your essay, using the following thesis statement: Medical researchers have reported several benefits for playing sports. To begin with, playing games can improve blood circulation ...*

DCF on organization. Using DOKEOS, the lead researcher also commented on the structure of language learners' essays. Shehadeh (2011) stated that organization of an essay might include "fluency of expression, clarity in the statement of ideas; support; and organization of ideas" (p. 291). The following shows an example of CDF on one of language learners' essays.

Student's Essay (intermediate level*): [1] Sport play a lot of essential roles in the life of us. [2] I like sport like football and ski. Because girls are not able to do games like ski I am so unhappy. I want to remain healthy and thus play sport.*

Lead researcher's DCF: Use specific supports to develop your thesis highlighted in red. The sentences in your essay are not sufficiently coherent and do not develop the same central argument. For example, the relationship between the sentence in yellow and the one in green is not clear. You could stick to the point and use information related to the importance of sports.

DCF on grammar. Grammar is an essential component of L2 learning. The lead researcher provided DCF on the syntax of language learners' essays, including tense, word order, articles, pronouns, prepositions, negation, and accuracy of sentence structures. The following is an excerpt from one of language learners' essays, followed by DCF.

Student's Essay (beginning level*): [1] on the past people [2] are very [3] health and happy because their jobs were like sport, but now people are very sick, so they [4] has to do a game.*

Lead researcher's DCF: *(1. in the past); (2 & 3. people used to be very healthy); (4. they   have to)*

DCF on vocabulary. In this study, the lead researcher provided DCF on different aspects of vocabulary such as effective word/idiom choice and usage, correct word forms, and appropriate register. The following comment shows DCF on one of language learners' essays.

Student's Essay (intermediate level*): Now, sport [1] is attention in the world because it [2] helps to beautiful life. I like to [3] go a lot of competition every day. I [4] play swimming with my younger brother.*
Lead researcher's DCF: *(1. enough attention is paid to sport); (2. helps a healthier life); (3. play sports); (4. go swimming)*

DCF on mechanics. The final component of writing in this study was mechanics. The lead researcher provided DCF on the spelling, punctuation, capitalization, paragraph indentation, and hyphenation. The following DCF was provided on part of the essay of one of the advanced language learners.
Student's Essay (intermediate level*): We have to play sport to [1] garrantee our health [2] and life and future. Many good doctors warn us about the disadvantages of not playing sport. As we get older [3] we become weaker. [4] if we do sport in our young time [5] we will be healthy in our old age. I play sport three times a week.*

Lead researcher's DCF: (*1. Please, take care of the spelling of "Guarantee"); (2. When you have a list to introduce, put comma between the items and use "and" before the last item: our health, life, and future); (3. Use a comma after "older"); (4. Capitalize the first word of the sentence: If); (5. You need to use a comma between if clause and main clause.*

Appendix B also shows two excerpts from DOKEOS, providing the readers with how comments were made and how language learners responded to those comments.

Data Analysis

During the last class session, language learners at three levels of language proficiency were asked to write a 300-word essay on the following topic: Would you prefer to have a dangerous job with a high income or a soft one with a low income? They were allotted forty minutes to finish writing their essays and hand them to the lead researcher. In each class, 20 language learners took the test. The lead researcher rated the essays on content, organization, vocabulary, grammar, and mechanics, using ESL Composition Profile.

ESL Composition Profile is a 4-point analytic scale (the points range from "very poor", "poor to fair", "average to good", and "very good to excellent"), with descriptors for each point about how to evaluate content, organization, vocabulary, grammar, and mechanics of the scale. Each point is defined as a band, i.e., 17-21, except for mechanics which includes single numerical values. Using the descriptors of the scale, the lead researcher used these four points to assign a rating to those five criteria. Accordingly, a student may have received a score of 21 on content and a score of 4 on mechanics. Each criterion received a rating.

To check the reliability of ratings, another independent, experienced rater rated all the essays. Pearson correlation coefficient was .86 for the ratings. This reliability index was cheeked against Cohen's (1988) criteria and proved acceptable. IBM SPSS (version 21) was used for the analysis of data.

Results

Differences among language learners at three levels of language proficiency

The research question of this study asked if language learners at three levels of language proficiency differed on components of writing. To answer

this question, we used a one-way multivariate analysis of variance (MANOVA). Table 3 shows descriptive statistics for the research question.

Table 3.

Descriptive Statistics of Components of Writing among Three Levels of Language Proficiency

Components	N	Level	Mean	Std. Deviation	Min. Score	Max. Score
Content	20	Beginning	10.70	5.61	5	20
	20	Intermediate	16.85	4.53	5	25
	20	Advanced	19.25	4.42	12	30
Organization	20	Beginning	11.85	3.70	5	15
	20	Intermediate	10	4.29	5	15
	20	Advanced	13.45	3.53	5	20
Grammar	20	Beginning	13.75	3.58	10	20
	20	Intermediate	13.75	4.83	5	25
	20	Advanced	16	5.28	10	25
Vocabulary	20	Beginning	13.5	4	5	20
	20	Intermediate	10.75	4.37	5	20
	20	Advanced	13.20	2.91	10	20
Mechanics	20	Beginning	2.95	1.27	1	5
	20	Intermediate	4.10	0.85	3	5
	20	Advanced	4.30	0.86	2	5

As can be seen in Table 3, except for vocabulary (Mean score = 13.5), the mean scores for all other components of writing for advanced language learners were higher than those for beginning and intermediate language learners. To examine whether the mean score differences among three levels of language proficiency were statistically significant, we ran a one-way MANOVA.

Before conducting the principal MANOVA analysis, we tested our data for violations of homogeneity of variance-covariance because there were fewer than 30 cases in each cell in our study. First, we checked Box's Test, the results of which are shown in Table 4.

Table 4.

Box's Test of Equality of Covariance Matrices

Box's M	40.06
F	1.58
df1	21
df2	5.31
Sig.	0.044

P values for Box's Test should be larger than .001 (Tabachnick & Fidell, 2007). Our data did not violate this assumption (p = .044). Next, we checked Levene's Test, the results of which are shown in Table 5. All p values in our study were larger than .05, indicating that equal variances were assumed.

Table 5.

Levene's Test of Equality of Error Variances

Components of writing	*F*	df1	df2	*Sig.*
Content	1.51	2	57	0.22
Organization	0.42	2	57	0.65
Grammar	2.33	2	57	0.10
Vocabulary	0.37	2	57	0.69
Mechanics	2.74	2	57	0.07

Using a one-way MANOVA, we examined mean score differences among three levels of language proficiency. First, we checked Wilks' Lambda (Table 6). The value of this test (p = .001) showed mean scores were statistically significant. Next, we checked tests of between-subjects effects. We used a Bonferroni adjustment to avoid Type I error. We divided the original .05 by five (number of dependent variables) to find the adjusted alpha for each dependent variable. Significance values were checked against the new adjusted alpha (.01) for five components of writing. The results, as shown in Table 7, showed statistically significant differences across three proficiency levels were on content (p = .001) and mechanics (p = .001). Partial eta squared

showed moderate proportion of variance in content and small proportion of variance in mechanics.

Table 6.

Statistics for Wilks' Lambda

Levels	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Wilks' Lambda	0.380	5.39	12	104	.001	0.38

Table 7.

Between-subjects Effects

	Dependent Variables	df	Mean Score	F	Sig.	Partial Eta Squared
	Content	2	388.95	16.29	**.001**	.364
	Organization	2	59.61	4.01	.023	.123
Proficiency levels	Grammar	2	33.75	1.58	.215	.053
	Vocabulary	2	45.51	3.12	.051	.099
	Mechanics	2	10.61	10.26	**.001**	.265

To locate the exact differences across three proficiency levels, we ran post-hoc Scheffe test on content and mechanics.

Table 8.

Post-hoc Scheffe Test across Three Proficiency Levels on Content and Mechanics

Dependent Variables	(I) Levels	(J) Levels	Mean Difference (I-J)	Std. Error	Sig.
	Beginning	Intermediate	-6.15	1.54	.001
		Advanced	-8.55	1.54	.000
	Intermediate	Beginning	6.15	1.54	.001
Content		Advanced	-2.40	1.54	.307
	Advanced	Beginning	8.55	1.54	.000
		Intermediate	2.40	1.54	.307

Dependent Variables	(I) Levels	(J) Levels	Mean Difference (I-J)	Std. Error	Sig.
Mechanics	Beginning	Intermediate	-1.15	.32	.003
		Advanced	-1.35	.32	.000
	Intermediate	Beginning	1.15	.32	.003
		Advanced	-.20	.32	.825
	Advanced	Beginning	1.35	.32	.000
		Intermediate	.20	.32	.825

As shown in Table 8, the differences on content lay between beginning and advanced language learners, as well as beginning and intermediate language learners. As for mechanics, the differences were between beginning and intermediate language learners, as well as beginning and advanced language learners.

Gain from DCF through EP among language learners

We finally checked estimated marginal means to determine which proficiency level benefited more from DCF via EP. Table 9 shows the results.

Table 9.

Mean Scores across Three Proficiency Levels on Content and Mechanics

Components	Proficiency levels	Mean	Std. Errors	95% Confidence Interval Lower Bound	Upper Bound
Content	Beginning	10.70	1.09	8.51	12.88
	Intermediate	16.85	1.09	14.66	19.03
	Advanced	19.25	1.09	17.06	21.43
Mechanics	Beginning	2.95	.227	2.49	3.40
	Intermediate	4.10	.227	3.64	4.51
	Advanced	4.30	.227	3.84	4.75

The information in Table 9 indicates that, on both content and mechanics, advanced language learners benefited from DCF more than both beginning and intermediate language learners.

Discussion

This study investigated five components of writing across three levels of language proficiency. The results of MANOVA analysis showed that a statistically significant difference was found in some components of writing at three levels of language proficiency, $F (12, 104) = 5.39$, $p <.05$, *Wilks' Lambda*, .38, $\eta^2 = .38$. Further analysis using Bonferroni adjustment showed that language learners differed significantly on only content ($F (2, 57) = 16.29$, $p <.01$, $\eta^2 = .364$) and mechanics ($F (2, 57) = 10.26$, $p<.01$, $\eta^2 = .265$). Results of post-hoc analysis using Scheffe test showed that statistically significant differences were found between beginning and advanced language learners as well as beginning and intermediate language learners on content and mechanics. However, no statistically significant differences were found between intermediate and advanced language learners in content and mechanics.

The findings of this study confirm some of those from previous studies (Burstein, Chodorow, & Leacock, 2004; Lavolette, Polio, & Kahng, 2014; Li, 2014). These studies have shown that when electronic platforms are used, positive effects may be observed regarding some aspects of writing, including the quality of l2 learners' writing. These studies have highlighted the influential roles of immediacy of online feedback and multiple revision opportunities. Examining the role of feedback types across proficiency levels, Li, for example, found that more direct corrective feedback was more effective for more proficient language learners learning Chinese as a foreign language. Similarly, Shintani (2016) analyzed the writing performance of Japanese second-year university students, using both synchronous and asynchronous

corrective feedback in an online programme. The findings showed that both synchronous and asynchronous corrective feedback provided opportunities for language learners to notice linguistic forms in context, deliver input when necessary, and allow language learners to use feedback in their subsequent output.

The finding that advanced language learners benefited from feedback is consistent with those of Mackey and Philp (1998) and Ammar and Spada (2006), who found that language learners who were more developmentally ready benefited from feedback. It is possible that as Li (2014) argued, "the high-proficiency learners had more cognitive resources at their discretion" (p. 19), although this should be treated with caution because some other studies have reported mixed results. As Stevenson and Phakiti (2014) rightly asserted, "the notion that computers are capable of providing effective writing feedback has aroused considerable suspicion, perhaps fueled by the fearful specter of a world in which humans are replaced by machines" (p. 52).

Why were significant differences found in content and mechanics between beginning and intermediate, and beginning and advanced Iranian EFL learners? The following possible reasons may be given. First, the feedback type we provided language learners was DCF. Language learners might have performed differently if other feedback types had been offered. Second, the kind of electronic platform may make a difference. In our study, we used EP to provide DCF. Although we did not examine the interaction between feedback type and electronic platform in this study, this interaction may also contribute to the differences. We also argue that since content and mechanics depend on linguistic forms of written texts, they generally tend to be more difficult for beginning language learners to manage.

The second finding of this study was that advanced language learners benefited the most enormously from DCF via EP, followed by intermediate language learners. One reason why advanced language learners benefit from

DCF via EP much better may relate to the high level of language proficiency. As Loucky (2002) noted, the higher the proficiency level of an L2 learner is, the higher they can benefit from CALL. A second possible reason why advanced language learners outperform intermediate and beginning language learners may be explained from a cognitive perspective. From this perspective, it can be argued that advanced L2 learners may be cognitively more mature, and this cognitive maturity may help them interact better with an EP platform. This claim is also confirmed in the study of Li (2014), who concluded that "Learners with higher proficiency, because their load in processing other competing linguistic stimuli is reduced, likely have more cognitive space freed up and are more cognitively involved in processing the corrective information" (p. 19). However, this is an open question, which needs to be backed up by empirical research.

A third possible reason may relate to the threshold language learners need to reach so that they will be able to use EP platforms. As Lee and Schallert (1997) concluded, "the concept of a threshold in various scholastic fields seems to indicate a turning point on a continuum at which a marked change will occur" (p. 714). The threshold at which this may occur, as the results of this study showed, may be at an intermediate level, below which language learners may not interact with, and use EP platforms more efficiently.

A final possible reason may concern developmental stages of learning. Beginning language learners seem not to be developmentally ready for DCF through EP. This is consistent with Pienemann's (1985) teachability hypothesis that "instruction can only promote language acquisition if the interlanguage is close to the point when the structure to be taught is acquired in the natural setting so that sufficient processing prerequisites are developed" (p. 37), and Krashen's (1985) input hypothesis that comprehensible input occurs at I + 1, and that input should not be much beyond the current level of language learners. The results show that using EP platforms to receive DCF

may be much beyond beginning language learners' current level of language proficiency.

From an affective point of view, due to high language proficiency, advanced language learners, and intermediate language learners, may manage EP environments more effectively, finding such platforms less stressful and more user-friendly. This is consistent with the literature on CALL. Richards and Rodgers (2014), for example, commented that language learners might be comfortable with types of technology "since for some learners technology-based learning is a less stressful way to practice using English than classroom-based activities where they feel they are being compared with their peers" (p. 340). Similarly, Guénette and Lyster (2013) reported that one of the greatest concerns for teachers when working with "less proficient tutees" to comment on their texts is "not only in terms of what to correct but also in terms of how to provide simple explanations for complex grammatical features" (p. 145).

The results support the hypothesis that L2 learners at different language proficiency levels may differ on some components of writing when they receive DCF via EP. The findings also confirm the hypothesis that the more proficient language learners may incorporate DCF into the drafts of their essays when it is provided through EP. Using EP as a medium of teaching L2 writing is both expensive and time-consuming. The results of this study may suggest that we can make EP more cost-effective and less time consuming if we use it for more proficient language learners.

Conclusion

In the present study, it was attempted to investigate supplying Iranian EFL learners with DCF across levels of language proficiency via EP. The findings showed significant differences in content and mechanics, two main components of writing, across three levels of language proficiency. The results also showed that advanced language learners significantly benefit from

provision of feedback via EP. One tentative conclusion to be drawn from these findings may confirm the efficacy of EP as an online platform to deliver direct feedback to language learners, helping language teachers to use it as a useful mode of feedback delivery alongside the more traditional procedures they may be currently using.

The findings of the study suggest that the more proficient the learners are, the more efficiently they can use EP. We, therefore, hypothesize that a threshold level at which language learners can benefit from DCF via EP platforms may exist. This threshold level may relate to the proficiency level of language learners, and it may be best suited for intermediate language learners. However, we do not know if it may hold true in other settings because we tested it in an EFL setting on few participants. Researchers in the future may consider testing this hypothesis in different contexts, using more careful accurate experimental studies in which factors other than language proficiency are examined. We also suggest that researchers consider examining the differential effects of different feedback types across different proficiency levels in the future, using traditional methods and EP platforms.

Although the results from the present study may prove promising, some limitations should be acknowledged. The first limitation of the present study concerns the design. The present study used a quantitative methodology to examine feedback delivery across three levels of language proficiency via a very modern online platform. A follow-up, semi-structured interview could have been used to seek the opinions of the participants in the present study about how they perceived the provision of feedback via EP. The second shortcoming has to do with the relatively few number of language learners participating in this study, which limits the generalizability of the findings. The third drawback relates to the feedback type. Only a single feedback type, DCF, was provided, and other feedback types were not examined. The

provision of additional direct, or indirect, feedback types may have yielded results worthy of further exploration.

The type of work described and the research findings reported in this paper, though relatively small-scale, may stimulate further research. One further area of research which researchers in the future may consider carrying out may have to do with cross-comparing the effect of different online, and more traditional, feedback modes of delivery. When proved more useful, such online platforms can be used to deliver feedback to language learners to facilitate feedback delivery and prevent the problem of physical meetings between teachers and students. The second avenue of research worthy of investigation relates to providing language learners with various forms of feedback across multiple levels of language proficiency in ESL and EFL settings using more sophisticated online platforms. This may prove very promising because it may help researchers to decide on which feedback type will lend itself readily to the online mode of delivery.

References

Ammar, A., & Spada, N. (2006). One size fits all? Recasts, prompts, and L2 learning. *Studies in Second Language Acquisition, 28*(4), 543–574.

Baturay, M. H., & Daloglu, A. (2010). E-portfolio assessment in an online English language course. *Computer Assisted Language Learning, 23*(4), 413-428.

Berlin, L. N. (2005). *Contextualizing College ESL Classroom Praxis: A Participatory Approach to Effective Instruction*. Mahwah, NJ: Lawrence Erlbaum.

Bitchener, J., & Knoch, U. (2008). The value of written corrective feedback for migrant and international students. *Language Teaching Research Journal, 12*(3), 409-341.

Bitchener, J. Young, S. & Cameron, D. (2005). The effect of different types of corrective feedback on ESL student writing. *Journal of Second Language Writing, 14*(2), 191-205.

Blanton, L. L. (2008). *Step-by-step writing book (1-3): A standards-based approach*. HEINLE: Australia.

Brush, T., Glazewski, K. D., & Hew, K. F. (2008). Development of an instrument to measure preservice teachers' technology skills, technology beliefs, and technology barriers. *Computers in the Schools, 25*(1), 112-125.

Burstein, J., Chodorow, M., & Leacock, C. (2004). Automated essay evaluation: The Criterion online writing service. *AI Magazine, 25(*3), 27–36.

Castro Sánchez, J. J., & Alemán, E. C., (2011). Teachers' opinion survey on the use of ICT tools to support attendance-based teaching. *Journal Computers and Education, 56*(3), 911-915.

Chai, C. S., Koh, J. H. L., & Tsai, C.C. (2010). Facilitating preservice teachers' development of technological, pedagogical, and content knowledge (TPACK). *Educational Technology and Society, 13(*1), 63-73.

Chandler, J. (2003). The efficacy of various kinds of error feedback for improvement in the accuracy and fluency of L2 student writing. *Journal of Second Language Writing, 12*(3), 267-296.

Chapelle, C. (2001). *Computer applications in second language acquisition: Foundations for teaching, testing, and research*. Cambridge: Cambridge University Press.

Chapelle, C. (2009). The relationship between second language acquisition theory and computer-assisted language learning. *The Modern Language Journal, 93*(1), 741-753.

Chau, J., & Cheng, G. (2010). Towards understanding the potential of e-portfolios for independent learning: A qualitative study. *Australian Journal of Educational Technology*, 26(7), 932-950.

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences*. Hillsdale, NJ: Erlbaum.

DOKEOS. (2014). Retrieved November 28, 2014 from *www.dokeos.com.*

Erice, D., & Ertas, A. (2011). The impact of e-portfolio on foreign language writing skills. *Journal of Faculty of Educational Sciences, 44*(2), 73-94.

Ferris, D. R. (1999). The case for grammar correction in L2 writing classes. A response to Truscott (1996). *Journal of Second Language Writing, 8*(1), 1-10.

Ferris, D. R. (2002). *Treatment of error in second language student writing*. Ann Arbor: University of Michigan Press.

Ferris, D. R. (2004). *Response to student writing: Implications for second language students*. Mahwah, NJ: Lawrence Erlbaum Associates.

Ferris, D. R., Liu, H., & Rabie, B. (2011). The job of teaching writing: Teacher views of responding to writing. *Writing and Pedagogy, 3*(1), 39–77.

Ferris, D. R., Liu, H., Sinha, A., & Senna, M. (2013). Written corrective feedback for individual L2 writers. *Journal of Second Language Writing, 22*(3), 307-329.

Ferris, D. R. (1995). Teaching ESL composition students to become independent self-editors. *TESOL Journal, 4*(1), 18-22.

Ferris, D. R., Chaney, S. J., Komura, K., Roberts, B. J., & McKee, S. (2000). *Perspectives, Problems, & practices in treating written error*. Colloquium presented at International TESOL Convention, Vancouver, BC.

Ferris, D., Brown, J., Liu, H., Eugenia, M., & Stine, A. (2011). Responding to L2 Students in College Writing Classes: Teacher Perspectives. *TESOL Quarterly, 45*(2), 207-234.

Fiori, M. L. (2005). The development of grammatical competence through synchronous computer-mediated communication. *CALICO Journal, 22*(3), 567-602.

Frantzen, D. (1995). The effects of grammar supplementation on written accuracy in an intermediate Spanish content course. *Modern Language Journal, 79*(3), 329-344.

Garrett, N. (1991). Technology in the service of language learning: Trends and issues. *Modern Language Journal, 75*(1), 74–101.

Golonka, E. M., Bowles, A. R., Frank, V. M., Richardson, D. L., & Freynik, S. (2014). Technologies for foreign language learning: A review of technology types and their effectiveness. *Computer Assisted Language Learning, 27*(1), 70-105.

Guénette, D. (2008). Is feedback pedagogically correct? Research design issues in studies of feedback on writing. *Journal of Second Language Writing, 16*(1), 40-53.

Guénette, D. (2012). The pedagogy of error correction: Surviving the written corrective feedback challenge. *TESL Canada Journal, 30*(1), 117-126.

Guénette, D., & Lyster, R. (2013). Written corrective feedback and its challenges for pre-service ESL teachers. *The Canadian Modern Language Review, 69*(2), 129-153.

Hackmann, D. G., & Alsbury, T.L. (2005). Standards-based leadership preparation program improvement through the use of portfolio assessments. *Educational Considerations, 32*(2), 36-45.

Hassaskhah, J., & Sharifi, A. (2011). The role of portfolio assessment and reflection on process writing. *Asian EFL Journal, 13*(1), 193-231.

Hegelheimer, V., & Tower, D. (2004). Using call in the classroom: analyzing student interactions within an authentic call program. *System, 32*(2), 185-205.

Himpsl-Gutermann, K., & Baumgartner, P. (2010). Evaluation of e-portfolio systems. In A. Buzzetto-More (Eds.), *E-portfolio Paradigm: Informing, Educating, Assessing, and Managing with E-portfolios*, (pp.19–33). Santa Clara: Informing Science Press.

Jacobs, H., Zinkgraf, S., Wormuth, D., Hartfiel, V., & Hughey, J. (1981) *Testing ESL composition: A practical approach*. Rowley, MA: Newbury House.

Kahtani, S., A. (1999). Electronic portfolios in ESL writing: An alternative approach. *Computer Assisted Language Learning, 12*(3), 261-268.

Kam, R., Tang, S. K., & Lee, L. (2016). The impact of technology-supported and triangulated writing tasks on a pilot interdisciplinary undergraduate subject for construction disciplines. *Computers and Composition, 40*(2), 131-150.

Koc, M. (2005). Implications of learning theories for effective technology integration and preservice teacher training: A critical literature review. *Journal of Turkish Science Education, 2*(1), 2-18.

Kondo-Brown, K. (2002). A FACETS analysis of rater bias in measuring Japanese L2 writing performance. *Language Testing, 19*(1), 3–31.

Krashen, S. (1985). *The Input hypothesis*. London: Longman.

Kupelian, M. (2001). The use of email in the L2 classroom: An overview. *Second Language Learning & Teaching, 1*(1): Retrieved from http://www.usq.edu.au/opacs/cllt/sllt/1-1/ Kupelian01.htm.

Lavolette, E., Polio, C., & Kahng, J. (2014). The accuracy of computer-assisted feedback and students' responses to it. Language Learning & Technology, *19(2),* 50–68.

Lee, E., Chan, C., & van Aalst, J. (2006). Students assessing their collaborative knowledge building. *Computer-Supported Collaborative Learning, 1*(1), 277–307.

Lee, I. (2008). Understanding teachers' written feedback practices in Hong Kong secondary classrooms. *Journal of Second Language Writing, 17*(1), 69–85.

Lee, J., & Schallert, D., L. (1997). The relative contribution of L2 language proficiency and L1 reading ability to L2 reading performance: A test of the threshold hypothesis in an EFL context. *TESOL Quarterly, 31*(4), 713-739.

Levin, T. & Wadmany, R. (2006). Teachers' beliefs and practices in technology-based classrooms: A developmental view. *Journal of Research on Technology in Education, 39*(3), 417-441.

Li, S. (2014). The interface between feedback type, L2 proficiency, and the nature of the linguistic target. *Language Teaching Research, 18*(3), 373-396.

Long, M. H. (1996). The role of the linguistic environment in second language acquisition. In W. C. Ritchie & T. K. Bhatia (Eds.), *Handbook of second language acquisition* (pp. 413–468). New York: Academic Press

Lorenzo, G., & Ittelson, J. (2005). *An Overview of e-Portfolios.* Retrieved January 18, 2016, from http://www.educause.edu/ir/library/pdf/ELI3001.pdf

Loucky, J. P. (2002). Assessing the potential of computerized bilingual dictionaries for enhancing English vocabulary learning. P. N. D., Lewis (Eds.). *The changing face of CALL* (pp. 123-137). CRC Press.

Mackey, A., & Philp, J. (1998). Conversational interaction and second language development: Recasts, responses, and red herrings? *The Modern Language Journal, 82*(3), 338–356.

McMahon, G. (2009). Critical thinking and ICT integration in a Western Australian secondary school. *Educational Technology and Society, 12*(2), 269-281.

Montgomery, J. L., & Baker, W. (2007). Teacher-written feedback: Student perceptions, teacher self-assessment, and actual teacher performance. *Journal of Second Language Writing, 16*(1), 82-99.

Nassaji, H. (2007). The development of spelling and orthographic knowledge in English as an L2: A longitudinal case study. *The Canadian Journal of Applied Linguistics, 10*(1), 77-98.

Peters, M., Chevrier, J., LeBlanc, R., Fortin, G., & Malette, J. (2006). The e-portfolio: A learning tool for Pre-Service Teachers. In A. Jafari & C. Kaufman (eds.), *Handbook of research on e-portfolios* (pp. 313- 326). Hershey: Idea Group Reference.

Phakiti, A. (2003). A closer look at gender and strategy use in L2 reading. Language Learning, 53(4), 649-702.

Pica, T. (1994). Research on negotiation: What does it reveal about second-language learning conditions, processes, and outcomes? *Language Learning, 44*(4), 493-527.

Pienemann, M. (1985). Learnability and syllabus construction. In K. Hyltenstam & M. Pienemann (eds.), *Modelling and Assessing Second Language Development* (pp. 23-75). Clevedon, UK: Multilingual Matters.

Read, J., & Kroll, Designing and assessing effective classroom writing assignments for NES and ESL students. *Journal of Second Language Writing, 4*(1), 17-41.

Richards, J. C. & Rodgers, T. S. (2014). *Approaches and methods in language teaching*. (3rd ed.), Cambridge: Cambridge University Press.

Robb, T., Ross, S., & Shortreed, I. (1986). Salience of feedback on error and its effect on EFL writing quality. *TESOL Quarterly, 20*(1): 83-93.

Saeedi, Z., & Meihami, H. (2015). E-portfolio as a corrective platform towards EFL students' overall/componential writing performance. *Teaching English with technology, 15*(4), 76-97.

Saeedi, Z., Meihami, H., & Husseini, F. (2014). E-Mail Platform and Its Effects on Providing Corrective Feedback to EFL Students. *English Language Teaching (ELT), 1*(2), 41-65.

Salaberry, R. M. (2000). L2 morphosyntactic development in text-based computer-mediated communication. *Computer Assisted Language Learning, 13*(1), 5-27.

Shehadeh, A., (2011). Effects and student perceptions of collaborative writing in L2. *Journal of Second Language Writing, 20*(4), 286-305.

Shepherd, G. E., & Bolliger, D. U. (2011). The effects of electronic portfolio tools on online students' perceived support and cognitive load. *The Internet and Higher Education, 14*(3), 142-149.

Shintani, N. (2015). The effects of computer-mediated synchronous and asynchronous direct corrective feedback on writing: a case study. *Computer Assisted Language Learning, 8*(3), 279-294.

Shintani, N. (2016). The effects of computer-mediated synchronous and asynchronous direct corrective feedback on writing: A case study. *Computer Assisted Language Learning, 29*(3), 517-538.

Shiotsu, T. & Weir C. J. (2007). The relative significance of syntactic knowledge and vocabulary breadth in the prediction of reading comprehension test performance. *Language Testing, 24*(1), 99-128.

Smith, B. (2003) Computer-mediated negotiated interaction: An expanded model. *The Modern Language Journal, 87*(1), 38-57.

Sotillo, S. M. (2000). Discourse functions and syntactic complexity in synchronous and asynchronous communication. *Language Learning & Technology, 4*(1), 82-119.

Stevenson, M., & Phakiti, A. (2014). The effects of computer-generated feedback on the quality of writing. *Assessing Writing, 19*(1), 51-65.

Stockwell, G. (2007). Vocabulary on the move: Investigating an intelligent mobile phone-based vocabulary tutor. *Computer Assisted Language Learning, 20*(4): 365-383.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics*. Boston: Allyn and Bacon.

Tahriri, A., Hassaskhah, J., Mozafarian Pour, A. (2015). The impact of synchronous computer-mediated communication on EFL learners' motivation. *International Journal of Research Studies in Educational Technology, 4*(2), 3-17.

Thang, M., S. Lee, S., Y., & Zulkifli, F., N. (2012). The role of the electronic portfolio in enhancing Information and Communication Technology

and English language skills: the voices of six Malaysian undergraduates. *Computer Assisted Language Learning*, 25(3), 277-293.
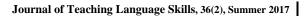
Truscott, J. (1996). The case against grammar correction in L2 writing classes. *Language Learning, 46*(2), 327-369.

Truscott, J. (1999). The case for "the case for grammar correction in L2 writing classes": A response to Ferris. *Journal of Second Language Writing, 8*(2), 111-122.

Truscott, J. (2007). The effect of error correction on learners' ability to write accurately. *Journal of Second Language Writing, 16*(4), 255-272.

Truscott, J. (2004) Evidence and conjecture on the effects of correction: A response to Chandler. *Journal of Second Language Writing, 13*(4), 337-343.

Van Beuningen, C., De Jong, N., & Kuiken, F. (2008). The effect of direct and indirect corrective feedback on L2 learners' written accuracy. *International Journal of Applied Linguistics, 156*, 279-296.

VanKooten, C., & Berkley, B. (2016). Messy problem-exploring through video in first-year writing: Assessing what counts. *Computers and Composition, 40*(2), 151-163.

Weigle, S. C. (2002) *Assessing writing*. Cambridge: Cambridge University Press.

Xu, Q., & Peng, H. (2017). Investigating mobile-assisted oral feedback in teaching Chinese as a second language. *Computer Assisted Language Learning, 30*(3-4), 173-182.

Appendix A. Jacobs, et. al's (1981) ESL Composition Profile

ESL COMPOSITION PROFILE

STUDENT   DATE   TOPIC

SCORE   LEVEL   CRITERIA   COMMENTS

CONTENT

30-27   EXCELLENT TO VERY GOOD: knowledgeable • substantive • thorough development of thesis • relevant to assigned topic

26-22   GOOD TO AVERAGE: some knowledge of subject • adequate range • limited development of thesis • mostly relevant to topic, but lacks detail

21-17   FAIR TO POOR: limited knowledge of subject • little substance • inadequate development of topic

16-13   VERY POOR: does not show knowledge of subject • non-substantive • not pertinent • OR not enough to evaluate

ORGANIZATION

20-18   EXCELLENT TO VERY GOOD: fluent expression • ideas clearly stated/supported • succinct • well-organized • logical sequencing • cohesive

17-14   GOOD TO AVERAGE: somewhat choppy • loosely organized but main ideas stand out • limited support • logical but incomplete sequencing

13-10   FAIR TO POOR: non-fluent • ideas confused or disconnected • lacks logical sequencing and development

9-7   VERY POOR: does not communicate • no organization • OR not enough to evaluate

VOCABULARY

20-18   EXCELLENT TO VERY GOOD: sophisticated range • effective word/idiom choice and usage • word form mastery • appropriate register

17-14   GOOD TO AVERAGE: adequate range • occasional errors of word/idiom form, choice, usage *but meaning not obscured*

13-10   FAIR TO POOR: limited range • frequent errors of word/idiom form, choice, usage *meaning confused or obscured*

9-7   VERY POOR: essentially translation • little knowledge of English vocabulary, idioms, word form • OR not enough to evaluate

LANGUAGE USE

25-22   EXCELLENT TO VERY GOOD: effective complex constructions • few errors of agreement, tense, number, word order/function, articles, pronouns, prepositions

21-18   GOOD TO AVERAGE: effective but simple constructions • minor problems in complex constructions • several errors of agreement, tense, number, word order/function, articles, pronouns, prepositions *but meaning seldom obscured*

17-11   FAIR TO POOR: major problems in simple/complex constructions • frequent errors of negation, agreement, tense, number, word order/function, articles, pronouns, prepositions and/or fragments, run-ons, deletions • *meaning confused or obscured*

10-5   VERY POOR: virtually no mastery of sentence construction rules • dominated by errors • does not communicate • OR not enough to evaluate

MECHANICS

5   EXCELLENT TO VERY GOOD: demonstrates mastery of conventions • few errors of spelling, punctuation, capitalization, paragraphing

4   GOOD TO AVERAGE: occasional errors of spelling, punctuation, capitalization, paragraphing *but meaning not obscured*

3   FAIR TO POOR: frequent errors of spelling, punctuation, capitalization, paragraphing • poor handwriting • *meaning confused or obscured*

2   VERY POOR: no mastery of conventions • dominated by errors of spelling, punctuation, capitalization, paragraphing • handwriting illegible • OR not enough to evaluate

TOTAL SCORE   READER   COMMENTS

Appendix B. DOKEOS sample 1 showing comments and revisions

DOKEOS sample 2 showing comments and revisions