International Journal of Education and Development using Information and Communication Technology (IJEDICT), 2018, Vol. 14, Issue 3, pp. 131-148

The effect of e-mail and WhatsApp on Jordanian EFL learners' paraphrasing and summarizing skills[1]

Ruba Fahmi Bataineh, Abdallah Ahmad Baniabdelrahman, and Kafa Mohammad Bani Khalaf
Yarmouk University, Irbid, Jordan

ABSTRACT

This study examines the potential effect of an eight-week e-mail- and WhatsApp-based instructional treatment on 45 Jordanian EFL tenth-grade students' paraphrasing and summarizing skills. Three instruments were used for data collection: a pre-test, a post-test, and an interview schedule. The findings reveal statistically significant differences (at α= 0.05) in the participants' mean scores on the post-test in favor of those in the WhatsApp group, combined e-mail and WhatsApp group, and e-mail group, respectively. The findings also reveal that the treatment has a significantly higher effect of on paraphrasing than on summarizing. Several pedagogical implications and recommendations are put forth.

Keywords: EFL, e-mail; paraphrasing; summarizing; WhatsApp; writing

INTRODUCTION AND BACKGROUND

Technology has recently had significant applications in the twenty-first century language classroom. Technological applications (e.g., electronic mail (e-mail), social media (e.g., Facebook, Twitter), WhatsApp, Dropbox) have made reading and writing in English even more crucial than ever before. As evidence abounds, in both theory and practice, of the close relationship between reading and writing (e.g., Carrell & Connor, 1991; Esmaeili, 2002; Fitzgerald & Shanahan, 2000; Flahive & Bailey, 1993; Janopoulos, 1986) in both the first and subsequent languages, reading avails writers of knowledge of the language, style, grammar, and vocabulary used by writers (Gradman & Hanania, 1991; Krashen, 2003; 2004; Krashen & Lee, 2004; Lee, 2001). The integration of reading and writing has become increasingly important in the English as a foreign language (EFL) classroom (Hirvela, 2004; Shanahan, 1997; Song, 2000), as reading is not only the major source of input in the EFL classroom, but also the traditionally practical medium of teaching (for lack of proficient or native-speaking teachers), not to mention that reading comprehension remains a primary part of college entrance examinations.

Teachers today are expected to be aware of the merits and utility of technological applications in and for the language classroom. Information and communication technology (ICT) applications are seen as supplementation, if not a potential replacement, to the more traditional modes of delivery in which the teacher is generally the source and resource of knowledge and the learners are mere recipients of this knowledge (Al-Barakat & Bataineh, 2008; Baniabdelrahman, Bataineh, & Bataineh, 2007; Bataineh & Baniabdelrahman, 2006; Bataineh & Al-Wazzan, 2014). With technology, learners are not only active participants in the teaching/learning process but also participants in a collaborative, visually enhanced, learner-centered process. According to Jewitt (2005, p.320/21),

---

[1] This manuscript is an extension of the second author's doctoral dissertation per the regulations in force at Yarmouk University, Irbid, Jordan.

> *technologies emphasize the visual potential of writing in ways that bring forth new configurations of image and writing on screen: font, bold, italic, color, layout, and beyond ... The potential of new technologies blur[s] the boundaries between the visual and the written in ways that "recast modes" and the relationships between them.*

Managing the skills of *paraphrasing* and *summarizing* (e.g., discriminating main ideas from details, eliminating less important details, condensing, rewording, and reorganizing the text) often constitutes a challenge for EFL learners. This is not only because it requires that they be knowledgeable about the lexical and syntactic features to comprehend the original text, but also because, more often than not, they have had little practice in *paraphrasing* and *summarizing* written texts in English.

In Jordan, English is taught as foreign language across primary and secondary education. Students across pre-tertiary education learn four to five 45-minute English lessons a week starting in the first-grade. Developing the four language skills (viz., listening, speaking, reading, and writing) is sought to achieve the ultimate goal of enabling learners to communicate meaningfully in English. However, despite massive efforts on the part of the Jordanian Ministry of Education in both curriculum and infrastructure reforms, students' achievement is generally limited and far from satisfactory (e.g., Bataineh & Bani Hani, 2011; Al-Damiree & Bataineh, 2016).

This research is conducted within a general movement in which Jordanian researchers (e.g., Al-Damiree & Bataineh, 2016; Al-Qeyam, Bataineh, & Smadi, 2016; Bani Younes & Bataineh, 2016; Bataineh & Alqatnani, 2017; Obeiah & Bataineh, 2015; 2016) have stepped forward to seek alternatives for the status quo to raise quality and insure sustainable learning. *Paraphrasing* and *summarizing* are targeted as vital skills not only for written communication but also for oral communication (e.g., Kissner, 2006), as they have been singled out not only as crucial requisites for comprehension, learning (Havola, 1987), and literacy development (Grabe, 2001; 2003) but also as promising instructional strategies in EFL reading and writing (Dugan, 1997; Grabe, 2001; 2003; Havola, 1987; National Reading Panel, 2000).

Writing, whether in the first or any subsequent languages, is a systematic, yet recursive, process which comprises several sub-skills, such as paraphrasing, summarizing, editing, and proofreading (e.g., Spratt, Pulverness, & Williams, 2005; Tribble, 1996). *Paraphrasing* and *summarizing* are fundamental skills for learners (e.g., Kissner, 2006; Stacia, 1997; Wu, 2013) at both school and university. Both *paraphrasing* and *summarizing* entail essentially the same processes of rewriting information from others in one's own words, but subtle differences exist between the two. In both *summary* and *paraphrase*, the writer should not parrot the original material without documentation but should rather reword the original and cite the source from which the material is borrowed. However, while *summarizing* aims to condense source material into a shorter form, *paraphrasing* is concerned with restating source material differently from the original with no concern for length. *Paraphrasing* and *summarizing* are fundamental for learners not only for writing daily assignments but also for carrying out and reporting research (e.g., Grabe, 2001; 2003; Havola, 1987; Keck, 2006; Pecorari, 2003; Shi, 2004). Otherwise, learners may fall prey to plagiarism, which is a serious problem across academia (Batane, 2010; Bretag and Mahmud, 2009; Ison, 2012; 2014; Leingang, 2006; Postle, 2009; Walker, 2010).

Nevertheless, research on *paraphrasing* and *summarizing*, within the framework of reading to write, writing to learn, and writing from multiple source texts, has been scarce and far-in-between. Research (e.g., Baba, 2009; Kissner, 2006; Wu, 2013) suggests that EFL learners are generally either unaware or not adequately proficient to paraphrase satisfactorily, which potentially limits their ability to produce acceptable summaries. Wu (2013), for example, argues that teachers can use *summarizing* to assess their students' identification of main and supporting ideas in a text, but they

essentially lack the ability to teach the skill itself, a matter compounded by the fact that *summarizing* is not a skill which develops automatically over time.

Educational research (e.g., Erben, Ban, & Castañeda, 2009; Kymes, 2005; Warschauer, 1997; Yang & Chen, 2007) suggests that the Internet and technology-based applications are catalysts for teaching and learning. Similarly, Erben, Ban and Castañeda (2009) argue for the utility of e-tools in facilitating writing progress, especially when students are afforded the opportunity to correct their own and their peers' writing and to work both independently and cooperatively in authentic learning contexts.

Similarly, research evidence (e.g., Ali & Kootbodien, 2017; Awada; 2016; Bouhnik & Deshen, 2014; Gonzalez, 2003; Hamad (2017); Haryanti, 2017; Keogh, 2017; Mahmoud, 2014; Nakamoto, 2005; Rambe & Bere, 2013; Rambe & Chipunza, 2013; Riyanto, 2013) abounds on the merit of using instant chatting in foreign language teaching and learning. For instance, Gonzalez (2003) and Awada (2016) argue that chatting provides real opportunities for collaborative learning, interaction, immediate feedback, and autonomous learning. Similarly, Nakamoto (2005) reports that the learner-centeredness feature of instant chatting increases learners' motivation to learn in- and outside the classroom. Along the same lines, Mahmoud (2014) maintains that using e-mail and instant chat breaks classroom routine, as learners are allowed opportunities to communicate electronically with the teacher and with each other, which potentially enables learners to get immediate feedback without the embarrassment of getting their essays smeared in red pen-corrections. Similarly, Bouhnik and Deshen, (2014), Hamad (2017), Haryanti (2017), Keogh (2017), Rambe and Bere (2013), Rambe and Chipunza (2013) and Riyanto (2013) report the merit of WhatsApp not only for providing access to learning materials, increasing student participation, and continuing teacher availability and learning beyond the classroom, but also for fostering learning scaffolding, ownership,enthusiasm, and communities, as learners are afforded opportunities for independent search and free self-expression.

More specific to the purpose of the current study, evidence (e.g., Bataineh, Al-Hamad, & Al-Jamal, 2018; Belisle, 1996; Engle, 1999; González-Bueno, 1998; Ybarra & Green, 2003) also abounds for the effectiveness of e-mail and instant chatting in teaching writing. Belisle (1996), for example, reports several advantages for using e-mail in teaching EFL/ESL writing amongst which are raising teachers' and learners' awareness of an innovative communicative tool that potentially facilitates group interaction and feedback provision. Furthermore, Engle (1999) claims that email transforms the classroom into a learner-centered environment, as learners shift roles from passive recipients to active participants while reading (and pondering) messages to produce, comment, reflect, assess, and revise beside improving their language skills. Moreover, Yang and Chen (2007) claim that e-mail exchange helps students create more ideas, be independent learners, and better apply the process-focused approach, not to mention that the anonymity of email correspondence, as opposed to face-to-face encounters, may encourage otherwise shy students to build self-confidence and improve their writing (Yunus, Salehi, & Chenzi, 2012).

More research findings (e.g., Abdul Fattah, 2015; Bataineh, Al-Hamad, & Al-Jamal, 2018) seem suggest that WhatsApp is a catalyst for writing. For example, Abdul Fattah (2015), who examined the effectiveness of WhatsApp Messenger in developing 30 Saudi Arabian college students' writing (viz., punctuation, sentence structures, and generating ideas), reported significant writing improvement on all aspects. Similarly, Bataineh, Al-Hamad, & Al-Jamal (2018), who examined the effect of WhatsApp on 98 EFL Jordanian eleventh-grade students' writing performance along the dimensions of content and ideas, organization and mechanics, vocabulary, and language use (with special reference to gender), reported improved writing performance on all dimensions (more for female participants than for their male counterparts). In a related study, Coauthor, Author, and Coauthor (Forthcoming) reported substantial improvement in Jordanian EFL adolescent learners' writing performance brought about by mobile-assisted language learning.

As writing, dubbed the neglected skill (e.g., Harder, 2006; Moon, 2008) is vital for EFL learners, this research seeks to examine the potential effect of technology-aided instruction on learners' written performance. Like other writing skills, *paraphrasing* and *summarizing* may be readily improved through computer-mediated communication (CMC) applications, such as e-mail and instant chatting, as learners engage in collaborative CMC-based writing tasks and benefit from both synchronous and asynchronous feedback (Bataineh, Al-Hamad, & Al-Jamal, 2018; Davis & Thiede, 2000; Godwin-Jones, 2008).

PURPOSE AND QUESTION OF THE STUDY

This study examines the potential effect of using e-mail and/or WhatsApp on Jordanian EFL learners' *paraphrasing* and *summarizing* skills. More specifically, it seeks to answer one question, *to what extent, if any, does using e-mail or/and WhatsApp develop Jordanian EFL learners' paraphrasing and summarizing skill?* Details pertaining to the effect of e-mail, WhatsApp, and a combination of those on *paraphrasing*, *summarizing*, and the two combined, along with comparisons of efficiency and effect, are addressed.

SIGNIFICANCE OF THE STUDY

Despite a plethora of research on the utility of email and that of WahtsApp on teaching and learning writing, to these researchers' best knowledge, no research has examined the potential utility of email and WhatsApp combined. This study specifically focuses on the potential effect of e-mail and WhatsApp on Jordanian EFL tenth-grade students' *paraphrasing* and *summarizing* skills. Thus, it may derive its significance from addressing the implications of technology-integration into writing instruction for teachers, curriculum designers and textbook writers alike.

METHODS AND PROCEDURES[2]

To achieve the purpose of the research, a sample of four intact tenth-grade sections, comprising 127 students, was purposefully drawn from the Bahraini Basic School for Girls in Irbid, Jordan. After the initial purposeful selection of the school, students were screened each for having both a smartphone and a working e-mail and/or WhatsApp account. Based on the screening, 45 students, who met the criteria for participation in the study, comprised three experimental groups of 15 students each and a fourth group of 15 students, who reported not having any of the requirements of the research, comprised the control group. The control group was taught, by the original class teacher, per the guidelines of the Ministry-prescribed Teacher Book, *Action Pack 10,* whereas the three experimental groups were taught by the second researcher through e-mail, WhatsApp, and a combination of both, respectively. The four groups were tested on *paraphrasing* and *summarizing* before and after the treatment. Between the two test administrations, the instructional treatment, which comprised 18 *paraphrasing* and *summarizing* activities on nine reading passages, was implemented over an eight-week interim, with four 40-minute sessions a week.

To further examine the effectiveness of the treatment, semi-structured interviews were held with seven participants from each experimental group (n=21) at school immediately after the conclusion of the treatment. The participants were queried about the frequency, purposes (academic vs.

[2] For queries and copies of the instruments and instructional material, contact the corresponding author at rubab@yu.edu.jo.

otherwise), and utility of their use of e-mail and WhatsApp for academic purposes. The interviews were tape-recorded, transcribed and analyzed for frequent themes.

Descriptive statistics (viz., means, standard deviations, and adjusted means), together with Analysis and Multivariate Analysis of Covariance (viz., ANCOVA, MANCOVA) and Boneferroni's Equation of Multiple Comparisons, were used to determine any potentially significant differences among the participants as a result of the instructional treatments.

To establish the validity of the treatment, the writing test, and the interview schedule, a jury of nine professors of language teaching and applied linguistics from Yarmouk University was asked to assess the appropraieness of the treatment and the instruments, in terms of content, language, and organization, for the purposes of the study. The jury's suggestions (e.g., clarifying the instructions of some activities, deleting few redundant outcomes, increasing the number of activities, delegating some modeling to students instead of the teacher, deleting one of the four interview questions) were taken into account in the final versions of the treatment and instruments. The reliability of the pre-/post-test was established by piloting it on a group of 30 students who were excluded from the main sample of the study, allowing a two-week interval between the two administrations of the test. Pearson Reliability Coefficients between the two administrations amounted to 0.86 for the items pertaining to *paraphrasing*, 0.87 for the items pertaining to *summarizing*, and 0.88 for the overall test. These values were all considered appropriate for the purposes of the research.

The Instructional Treatments

In conducting the research, the four groups of participants were taught per the guidelines of the prescribed Teacher Book, email, WhatsApp, and a combination of both, respectively. The control group was taught by the original teacher whereas the three experimental groups were taught by the second researcher who also observed a total of three 45-minute class sessions to assure that the control group was instructed per the guidelines of the Teacher Book. Following is a detailed account of the instructional treatment of each of the four groups.

The Control Group

The control group was taught *paraphrasing* and *summarizing* deductively per the procedures outlined in the Teacher Book, as follows:

1. The teacher highlighted the main ideas and the details in each text.
2. The students and teacher noted and brainstormed about the linking words used to connect parts of the text.
3. The teacher explained and demonstrated the criteria of a good paraphrase: (i) the paraphrase is about the same length as the original text, but it could be slightly shorter or longer, (ii) the meaning is retained, but the vocabulary and grammar are changed, and (iii) appropriate linking words are used.
4. The teacher also explained and demonstrated the criteria of a good summary: (i) a summary is shorter than the original text, (ii) vocabulary and grammar are changed, but the original meaning is retained, and (iii) appropriate linking words are used.
5. The students practiced *paraphrasing* and *summarizing*, individually, under the watchful eye of the teacher who circulated amongst them to help and answer questions.
6. Individual students read their finished pieces to the rest of the class, as their teacher (and, occasionally, peers) provided feedback.
7. The students were asked to do further revisions at home and to submit their final drafts the following session for the teacher to mark.

Experimental Group 1: The E-mail Group

1. At the onset of the treatment, the teacher/ second researcher introduced e-mailing and helped the participants who do not have email accounts each create one, demonstrating sending and receiving e-mails and allowing them to practice e-mail exchange amongst themselves.
2. For teaching *paraphrasing* and *summarizing*, she started by introducing the skill electronically, through a brief description and the criteria of producing each (viz., highlighting the main idea and important details, linking sentences with appropriate linking words, and changing grammar and vocabulary while retaining the original meaning).
3. The students were encouraged to use online resources (whose URLs were e-mailed to them) to learn about and practice *paraphrasing* and *summarizing*.
4. While *paraphrasing* was taught through four reading texts and two short stories from *Action Pack 10* and three online articles, *summarizing* was taught through four passages and two short stories from *Action Pack 10* and two online texts and a short movie per the procedures outlined in item 2 above.
5. The teacher modeled *paraphrasing*/*summarizing*, and the participants did two types of exercises (viz., writing a paraphrase/summary of a given text and correcting errors in a paraphrase/summary). Both participants and teacher engaged in practicing, monitoring, and asynchronous correction.
6. The participants then engaged in electronic *paraphrasing* and *summarizing* each of four reading passages and two short stories.
7. The participants were asked to self-correct their paraphrases/summaries per the criteria outlined in item 2 above.
8. Correcting errors in paraphrases/summaries was further practiced electronically, as students were e-mailed each of three online articles/ two texts with its *paraphrase/summary* to correct, as the teacher monitored their practice and correction and provided feedback through e-mail.
9. To consolidate, the students were asked to paraphrase two online texts and summarize a short movie and to write two 30-word summaries of two 300-word digital texts as homework.
10. The students also compared two breaking news articles from two electronic newspapers to better understand how to paraphrase texts with the same details. They wrote a six-line paragraph about the comparison and self-corrected it (per the criteria in Item 2 above) prior to e-mailing it to the teacher for feedback.

Experimental Group 2: The WhatsApp Group

1. At the onset of the treatment, the teacher/second researcher introduced and demonstrated the use of WhatsApp and created a group with all 15 students as participants.
2. For teaching *paraphrasing* and *summarizing*, she posted a brief account and the criteria (outlined above) of producing each and encouraged the students to use online resources to learn more about these skills.
3. Like in the e-mail group, *paraphrasing* and *summarizing* were taught through the same passages from *Action Pack 10* (uploaded to the group), but practice ensued through interactive dialogues.
4. Both student-student and student-teacher interactions were encouraged, the former to exchange experiences, ask and answer questions, and/or clarify details about *paraphrasing* and *summarizing* and the latter to ask for or provide individual help, especially for the participants who preferred doing so away from the group. Student-online resource interactions were also encouraged to further support students' *paraphrasing* and *summarizing*.

5. Like in the e-mail group, group-teacher interactions occurred, as the group benefitted from the WhatsApp log and/or media in their practice of *paraphrasing* and *summarizing*.
6. As members of the group practiced *paraphrasing* and *summarizing*, some asked questions or commented while others interacted with online resources or with the teacher for individual help. This multi-faceted interaction allowed every student the opportunity to participate.
7. The group was asked to use the WhatsApp log to carry out activities (e.g., revise a topic for further discussion, ask for clarification, and watch videos) for better understanding or overview.
8. At the end of each e-session, a YouTube video was posted for the students to watch and discuss.
9. For consolidation and feedback, the participants engaged in the same tasks as the e-mail group (outlined above), but they received immediate feedback from the teacher and their peers.

Experimental Group 3: The E-mail and WhatsApp Group

This group was taught through a combination of email- and WhatsApp (as detailed for Experimental Groups 1 and 2 above) on alternate weeks. Thus, the participants were exposed to either email or WhatsApp instruction every other week.

FINDINGS

To answer the research question, which addresses the potential effect of e-mail, WhatsApp and a combination of both on the students' *paraphrasing* and *summarizing* skills, the means and standard deviations of the students' scores on the pre-and post-test were calculated per the instructional treatment, as shown in Table 1.

Table 1: *Means and Standard Deviations of the Participant' Paraphrasing and Summarizing Scores on the Pre- and Post-test by Instructional Treatment*

Skill	Instructional Treatment	Pre-test (Covariate)		Post-test	
		Mean	SD	Mean	SD
Paraphrasing	Control	5.93	1.91	6.67	1.84
	E-mail	6.47	2.29	8.33	2.32
	WhatsApp	6.60	1.12	10.87	2.00
	E-mail and WhatsApp	6.87	2.45	9.20	2.57
Summarizing	Control	5.40	2.10	6.53	2.17
	E-mail	5.53	2.23	7.73	2.12
	WhatsApp	5.87	2.00	9.53	1.19
	E-mail and WhatsApp	5.20	1.74	9.40	1.45

n= 15

Table 1 shows observed differences among the participants' mean scores on *paraphrasing* and *summarizing*, which may be attributed to the instructional treatment. To determine the potential statistical significance of the observed difference, MANCOVA was calculated for the students' post-test scores per the instructional treatment (excluding their pre-test scores), as shown in Table 2.

Table 2: *MANCOVA of the Participants' Post-test Scores on Paraphrasing and Summarizing by Instructional Treatment*

Effect	Type	Value	F value	df	Sig.	Partial η^2
Paraphrasing Pre-test (Covariate)	Wilks' Lambda	0.35	50.15	2	0.00	0.654
Summarizing Pre-test (Covariate)	Wilks' Lambda	0.61	17.06	2	0.00	0.392
Instructional Treatment	Wilks' Lambda	0.26	16.84	6	0.00	0.488

Table 2 shows significant differences (at α= 0.05) in the participants' post-test scores on *paraphrasing* and *summarizing* combined. To determine which component of the post-test was affected most by the instructional treatment, ANCOVA was calculated for the students' scores on the *paraphrasing* component of the post-test (after excluding their pre-test scores), as shown in Table 3.

Table 3: *ANCOVA of the Participants' Post-test Scores on Paraphrasing by Instructional Treatment*

Source of Variance	Sum of Squares	df	Mean Square	F	Sig.	Partial η2
Paraphrasing Pre-test (Covariate)	130.17	1	130.17	92.59	0.00	0.6316
Summarizing Pre-test (Covariate)	0.01	1	0.01	0.00	0.95	0.0001
Instructional Treatment	115.09	3	38.36	27.29	0.00	0.6025
Error	75.92	54	1.41			
Total	408.73	59				

Table 3 shows significant differences (at α= 0.05) among the students' mean scores on the paraphrasing component of the post-test per the instructional treatment. To determine whether these differences are statistically significant, the participants' adjusted means and standard errors on the paraphrasing component of the post-test were calculated, as shown in Table 4.

Table 4: *Adjusted Means and Standard Errors of the Participants' Post-test Scores in Paraphrasing by Instructional Treatment*

Instructional Treatment	Adjusted Mean	Standard Error
Control	6.76	0.31
E-mail	8.30	0.31
WhatsApp	10.53	0.31
E-mail and WhatsApp	9.47	0.31

Table 4 shows observed differences in the participants' adjusted mean scores on *paraphrasing* on the post-test, in favor of those in the experimental groups (viz., the WhatsApp group, the combined e-mail and WhatsApp group, and the e-mail group, respectively). Boneferroni's equation of multiple comparisons was used to determine the potential significance of these differences, as shown in Table 5.

Table 5: *Bonferroni's of the Participants' Paraphrasing Component of the Post-test by Instructional Treatment*

Instructional Treatment		Control	E-mail	E-mail and WhatsApp
Bonferroni	Adj. Mean	6.76	8.30	9.47
E-mail	8.30	1.54		
E-mail and WhatsApp	9.47	2.71	1.17	
WhatsApp	10.53	3.77	2.23	1.06

Table 5 shows significant differences in the participants' scores on *paraphrasing*, in favor of the experimental groups. Whereas the participants in the WhatsApp group outperformed those in the control group and the e-mail group, respectively, those in the e-mail group and the combined e-mail and WhatsApp group outperformed those in the control group. Moreover, the practical significance of the instructional treatment (in Table 3) amounted to 60.25, which signals a *large* effect on the *paraphrasing* component of the post-test.

Similarly, ANCOVA was used to calculate the participants' scores on the *summarizing* component on the post-test per the instructional treatment (excluding their pre-test scores), as shown in Table 6.

Table 6: *ANCOVA of the Participants' Post-test Scores on Summarizing by Instructional Treatment*

Source of Variance	Sum of Squares	df	Mean Square	F	Sig.	Partial η2
Paraphrasing Pre-test (Covariate)	4.13	1	4.13	2.92	0.09	0.0513
Summarizing Pre-test (Covariate)	48.08	1	48.08	33.97	0.00	0.3862
Instructional Treatment	65.46	3	21.82	15.42	0.00	0.4614
Error	76.42	54	1.42			
Total	270.60	59				

Table 6 shows significant differences (at α= 0.05) among the students' post-test mean scores on *summarizing*, which can be attributed to the instructional treatment. To determine the group these differences are in favor of, the adjusted means of the participants' scores on the *summarizing* component of the post-test were calculated, as shown in Table 7.

Table 7: *Adjusted Means and Standard Errors of the Participants' Post-test Sores on Summarizing by Instructional Treatment*

Instructional Treatment	Adjusted Mean	Standard Error
Control	6.85	0.31
E-mail	7.73	0.31
WhatsApp	9.40	0.31
E-mail and WhatsApp	9.22	0.31

Table 7 shows observed differences among the students' adjusted mean scores on the *summarizing* component of the post-test, in favor of the experimental groups (viz., WhatsApp, e-mail and WhatsApp, and e-mail, respectively). To determine the potential significance of these differences, Boneferroni's was used, as shown in Table 8.

Table 8: *Bonferroni's of the Participants' Summarizing Component of the Post-test by Instructional Treatment*

Instructional Treatment		Control	E-mail	E-mail and WhatsApp
Bonferroni	Adjusted Mean	6.85	7.73	9.22
E-mail	7.73	0.88		
E-mail and WhatsApp	9.22	2.37	1.50	
WhatsApp	9.40	2.55	1.67	.017

Table 8 shows significant differences in the *summarizing* component of the post-test, in favor of the WhatsApp group over both the control group and the e-mail group. Table 8 also shows a significant difference in favor of the combined e-mail and WhatsApp group over the control group and the e-mail group. The practical significance of the instructional treatment (in Table 6) amounted to 46.14, which indicates a *moderate* effect on the *summarizing* component of the post-test.

Moreover, the participants' responses to the interview questions were analyzed to gain better insights into their use of e-mail and WhatsApp for general and academic purposes and the perceived utility of this use. Several themes emerged, most important amongst which are the following: (1) prior to the treatment, the participants reportedly used e-mail and WhatsApp exclusively for social purposes; (2) their use of e-mail and WhatsApp for academic purposes has reportedly started with this research; (3) their use of e-mail and WhatsApp in *paraphrasing* and *summarizing* activities has reportedly helped foster their self-confidence in, improve their attitudes towards, and decrease their anxiety and stress in learning writing; (4) their use of e-mail and WhatsApp has reportedly increased their motivation for language study in general and reading and writing in particular; (5) their use of e-mail and WhatsApp has reportedly made *paraphrasing* and *summarizing* activities easier and more meaningful.

DISCUSSION

The findings reveal statistically significant differences in the participants' *paraphrasing and summarizing,* in favor of those in the WhatsApp group, the combined e-mail and WhatsApp group, and the e-mail group, respectively. This confirms the potential effectiveness of e-mail and WhatsApp as catalysts for *paraphrasing* and *summarizing.* Yet, these findings reveal that the effect is larger on *paraphrasing* than it is on *summarizing*.

This positive effect of e-mail, WhatsApp, and the two combined on *paraphrasing* and *summarizing* may be readily explained. Throughout the treatment, the WhatsApp group engaged in several collaborative writing activities. The *group chat* feature of WhatsApp, which enabled the participants of this group to get the same input all at once, may have facilitated their collaboration in practicing *paraphrasing* and *summarizing*. For example, they helped one another get the main idea from the topic sentence of the paragraph and support it with ideas from the paragraph itself, which they then rewrote in their own words (linking sentences with appropriate linking words and changing grammar

and vocabulary while retaining the original meaning). In doing so, they collaborated with each other, especially in finding appropriate synonymous and linking words.

Thus, this collaborative engagement in learning through WhatsApp may have resulted in this relatively substantial improvement in the participants' *paraphrasing* and *summarizing*. This is consistent with previous research reports (e.g., Awada, 2016; Gonzalez, 2003) that WhatsApp positively affects students' collaborative writing.

Throughout the treatment, the participants in the WhatsApp group also engaged in reflective practice, as they worked repeatedly on their paraphrases and summaries. Not only did they reflect on their own but also on other participants' work (per the criteria outlined above). Thus, as they engaged in self- and peer-reflection, they realized their points of strength and weakness and addressed the latter through collaborative work. This is consistent with previous reports (e.g., Kissner, 2006) that reflection, further facilitated through the collaborative capabilities of WhatsApp, is a catalyst for *paraphrasing* and *summarizing*.

The participants in the combined e-mail and WhatsApp group used WhatsApp during the four sessions of one week and e-mail during those of the following week. However, as *paraphrasing* and *summarizing* are difficult for most EFL learners (e.g., Baba, 2009), these researchers were keen on the provision of opportunities for collaboration, interaction, synchronous feedback, encouragement and a non-threatening learning environment, which was more attainable through WhatsApp than through e-mail. Consequently, participants were found more enthusiastic during the WhatsApp week than they were during the e-mail week.

The participants' *paraphrasing* and *summarizing* were significantly affected by the treatment. Yet, its practical significance was higher on *paraphrasing* than on *summarizing*. The explanation is two-fold: first, while the participants paraphrased either a sentence or a paragraph, they summarized a text of three or more paragraphs in each task. Thus, it may have been easier for them to handle one idea (in one paragraph), find synonyms for key vocabulary, change grammar, and link the ensuing sentences than it was to handle more ideas across multiple paragraphs, which potentially requires a larger work load and more key vocabulary.

Second, the participants' pre-test mean scores on *paraphrasing* and *summarizing* are evidence to their relatively more serious weakness in *summarizing* (than *paraphrasing*), which may be readily attributed to the complexity of the task. In *paraphrasing*, they just restated the original idea in their own words whereas in *summarizing*, they provided a condensed overview of the source without the luxury of retaining its details. This extra work may have added to the difficulty of the task and, hence, the participants' relatively better performance in *paraphrasing*.

Furthermore, the improvement in the participants' *paraphrasing* and *summarizing* may be attributed not only to the use of e-mail and WhatsApp but also to the explicit activities in which they engaged over the course of the treatment. These activities provided hands-on practice as the participants collaborated to learn in a non-threatening atmosphere.

To further corroborate these conclusions, most of the students' interview responses highlighted the effectiveness of e-mail and WhatsApp for developing their *paraphrasing* and *summarizing*, not to mention the added advantages of working in an non-threatening collaborative atmosphere, which reportedly affected both their self-confidence and written performance.

CONCLUSIONS, IMPLICATIONS, LIMITATIONS, AND RECOMMENDATIONS

The findings have given rise to several conclusions. The treatment has brought about improvement in the participants' *paraphrasing* and *summarizing*, which may suggest a positive relationship between explicit instruction and the awareness of the utility of e-mail and WhatsApp in learning on one hand and the improvement in the skills under study on the other.

Unlike reading a print text, which is usually a linear event per the organization of the text, the multimodal feature of screen-based texts offers the reader new potentials for engagement. It further establishes the connection between in- and out- of school reading which, as it is no longer restricted to the print-based medium, may mandate reshaping the traditional conception of literacy (Gardener, 2000) which need be expanded to reflect the reading and writing in which young people are constantly involved (Unsworth, 2001; Jewitt, 2005).

Several pedagogical implications may be gleaned from the findings. The difference between the participants' pre- and post-test scores, against those in the control group, suggests a marked improvement in their performance on both *paraphrasing* and *summarizing*, but more so for the former. The explicit, CMC-mediated instruction may help learners develop balanced reading and writing proficiency, as *paraphrasing* and *summarizing* entail a command of, among others, reading comprehension, grammar, and vocabulary, which is essentially a catalyst for literacy development. The novelty of e-mail and WhatsApp integration, along with the explicit instruction and authentic texts, may have added to the effectiveness of the treatment. The participants' engagement in the tasks was exemplary, which may have readily accounted for their improvement.

Teaching *paraphrasing* and *summarizing* may also be an effective preventive measure against plagiarism. Students are made aware of the significance of these skills and the serious repercussions of copying without attribution.

The study is limited by few considerations: the participants were Jordanian tenth-grade students whose needs and performance may differ from those of students in other grade levels, other schools, and/or other regions in- and outside Jordan. Moreover, the treatment lasted for eight weeks in the first semester of the academic year 2016/2017, but a longer interim may have augmented the generalizability of the findings.

These findings have given rise to recommendations for teachers, textbook writers, and researchers. EFL teachers are urged to engage in skill-based instruction, be it the *paraphrasing* and *summarizing* addressed in this research or other skills (e.g., associating, outlining, drafting, revising) to improve their students' writing. Similarly, textbook writers and curriculum designers are called upon to address the advantages of incorporating less conventional modes of instruction, such as e-mail and WhatsApp, for the facilitation of teaching and learning writing. Researchers are also recommended to expand the findings of this research through examining the potential effectiveness of e-mail and WhatsApp in writing and other language skills. Future research may also involve larger samples over an extended interim to improve the generalizability of the findings.

REFERENCES

Abdul Fattah, S.F.E.S (2015). The effectiveness of using WhatsApp messenger as one of mobile learning techniques to develop students' writing skills. *Journal of Education and Practice*. 6(32), 115- 127. Retrieved 23 December 2017 from https://files.eric.ed.gov/ fulltext/EJ1083503.pdf.

Al-Damiree, R., & Bataineh, R. F. (2016). Vocabulary knowledge and syntactic awareness as potential catalysts for reading comprehension among young Jordanian EFL students. *Journal of Teaching and Teacher Education*, 4(1), 53-59.

Ali, M.S.S., & Kootbodien, A. (2017). The effectiveness of WhatsApp as an interpersonal communication medium among Abu Dhabi university students. *International Journal of Media, Journalism and Mass Communications*, 3(1), 11-19. Retrieved 24 December 2017 from https://www.arcjournals.org/pdfs/ijmjmc/v3-i1/2.pdf..

Al-Qeyam, F. R., Bataineh, R. F., & Smadi, O. M. (2016). The effect of form-focused instruction on learning and retaining pragmatic knowledge among Jordanian EFL tertiary-level learners. *Journal of International Doctoral Research,* 5(1), 28-50.

Awada, G. (2016). Effect of WhatsApp on critique writing proficiency and perceptions toward learning. *Cogent Education*, 3. Retrieved 21 May 2017 from https://www.cogentoa.com/article/10. 1080/2331186X.2016.1264173.pdf.

Baba, K. (2009). Aspects of lexical proficiency in writing summaries in a foreign language. *Journal of Second Language Writing*, 18(3), 191-208.

Bani Younes, R., & Bataineh, R. F. (2016). To dictogloss or not to dictogloss: Potential effects on Jordanian EFL learners' writing performance. *Apples – Journal of Applied Language Studies*, 10(2), 45-63**.** Retrieved 27 May 2017 from http://dx.doi.org/10.17011/apples/urn. 201610114330.

Baniabdelrahman, A. A., Bataineh, R. F., & Bataineh, R. F. (2007). An exploratory study of Jordanian EFL students' perceptions of their use of the Internet. *Teaching English with Technology,* 7(3). Retrieved 12 December 2018 from http://tewtjournal.org/issues/past-issue-2007/past-issue-2007-issue-3/.

Bataineh, R. F., Al-Hamad, R. F., and Al-Jamal, D. A. (April 2018). Gender and EFL writing: Does WhatsApp make a difference? *Teaching English with Technology*, 18(2), 21-33. Retrieved 12 December 2018 from http://www.tewtjournal.org/issues/volume-18/volume-18-issue-2/.

Bataineh, R. F., & Alqatnani, A. K. (2017). The effect of a Thinking Maps-based instructional program on Jordanian EFL tenth-grade students' critical reading skills. *Asian EFL Journal,* 101(2), 31-61.

Bataineh, R. F., & Al-Wazzan, R. A. (2014). Major Arabic computational linguistics tools in Saudi Arabia: An exploratory study. *International Journal of Computer and Information Technology*, 3(6), 1514-1520. Retrieved 12 December 2018 from http://www.ijcit.com/archives/volume3/issue6/ Paper030644.pdf.

Bataineh, R. F., & Bani Hani, N. A. (2011). The effect of a CALL program on Jordanian sixth-grade students' achievement. *Teaching English with Technology*, 11(3), 3-24. Retrieved

12 December 2018 from http://tewtjournal.org/issues/past-issue-2011/past-issue-2011-issue-3/.

Bataineh, R. F., & Baniabdelrahman, A. A. (2006). Jordanian EFL students' perceptions of their computer literacy. *International Journal of Education and Development Using ICT,* 2(2), 35-50. Retrieved 12 December 2018 from http://ijedict.dec.uwi.edu/viewarticle.php?id=169 &layout=html**.**

Batane, T. (2010). Turning to Turnitin to fight plagiarism among university students. *Educational Technology and Society*, 13(2), 1-12.

Belisle, R. (1996). E-mail activities in the ESL writing class. *The Internet TESL Journal*, 2(12). Retrieved 13 May 2017 from http://IteslJ.org/Articles/Belisle-Email.html.

Bouhnik, D., & Deshen, M. (2014). WhatsApp goes to school: Mobile instant messaging between teachers and students. *Journal of Information Technology Education: Research*, 13, 217-231. Retrieved 23 December 2017 from http://www.jite.org/documents/Vol13/ JITEv13 ResearchP217-231Bouhnik0601.pdf.

Bretag, T., & Mahmud, S. (2009). A model for determining student plagiarism: Electronic detection and academic judgment. *Journal of University Teaching and Learning Practice,* 6(1). Retrieved 17 May 2017 from http://ro.uow.edu.au/cgi/ viewcontent.cgi?article=107&context=jutlp.

Carrell, P. L., & Connor, U. (1991). Reading and writing descriptive and persuasive texts. *Modern Language Journal*, 75(3), 314-324.

Davis, B., & Thiede, R. (2000). Writing into change: Style shifting in a synchronous electronic discourse. In M. Warschauer & R. Kren (Eds.), *Network-based language teaching: Concepts and practice* (pp. 87-120). Cambridge: Cambridge University Press.

Dugan, J. (1997). Transactional literature discussions: Engaging students in the appreciation and understanding of literature. *The Reading Teacher*, 51(2), 86-96.

Engle, R. K. (1999). Analysis of e-mail mediated instructional conversations: Employment of sociolinguistic conversation mapping techniques. (ERIC Document Reproduction Service No. 437921). Retrieved 13 May 2017 from http://files.eric.ed.gov/fulltext/ED437921.pdf.

Erben, T., Ban, R., & Castañeda, M. (2009). *Teaching English language learners through technology*. New York: Routledge. Retrieved 21 May 2017 from http://perpus.stkipkusumanegara. ac.id/file_digital/Buku%20Digital%2086.pdf.

Esmaeili, H. (2002). Integrated reading and writing tasks and ESL students' reading and writing performance in an English language test. *The Canadian Modern Language Review*, 58(4), 599-622.

Fitzgerald, J., & Shanahan, T. (2000). Reading and writing relations and their development. *Educational Psychologist*, 35(1), 39-50.

Flahive, D. E., & Bailey, N. H. (1993). Exploring reading/writing relationships in adult second language learners. In J. Carson & I. Leki (Eds.), *Reading in the composition classroom* (pp.128-140). Boston: Heinle and Heinle.

Gardener, P. (2000). *Literacy and media texts in secondary English*. London: Cassell Education.

Godwin-Jones, R. (2008). Emerging technologies Web-Writing 2.0: Enabling, documenting, and assessing writing online. *Language Learning and Technology,* 1(2), 7-13. Retrieved 13 May 2017 from http://llt.msu.edu/vol12num2/ emerging.pdf.

Gonzalez, D. (2003). Teaching and learning through chat: A taxonomy of educational chat for EFL/ESL. *Teaching English with Technology*, 3(4), 57-69. Retrieved 19 May 2014 from http://iatefl.org.bl/call/callnl.htm.

González-Bueno, M. (1998). The effects of electronic mail on Spanish L2 discourse. *Language Learning & Technology*, 1(2), 55-70. Retrieved 21 May 2017 from http://llt.msu.edu/vol1num2/article3/.

Grabe, W. (2001). Reading and writing relations: Theoretical perspectives and instructional practices. In D. Belcher & A. Hirvela (Eds.), *Linking literacies: Perspectives on L2 reading and writing connections* (pp.15-47). Ann Arbor (Michigan): University of Michigan Press.

Grabe, W. (2003). Reading and writing relations: Second language perspectives on research and practice. In B. Kroll (Ed.), *Exploring the dynamics of second language writing* (pp.242-262). Cambridge: Cambridge University Press.

Gradman, H., & Hanania, E. (1991). Language learning background factors and ESL proficiency. *Modern Language Journal*, 75(1), 39-51.

Hamad, M. M. (2017). Using WhatsApp to enhance students' learning of English language "experience to share". *Higher Education Studies*, 7(4), 74-87. Retrieved 24 December 2017 from http://www.ccsenet.org/journal/index.php/hes/article/viewFile/71758/39227.

Harder, A. (2006). The neglected life skill. *Journal of Extension*, 44(1). Retrieved 10 May 2017 from http://www.joe.org/joe/2006february/comm1.php.

Haryanti, D. (2017). I Whatsapp an iguana: An attempt to apply ubiquitous learning. *Proceedings of the Sixth ELTLT Conference* (pp. 153-157). Retrieved 24 December 2017 from http://eltlt.org/wp-content/uploads/2017/12/THE-6TH-ELTLT-CONFERENCE-PROCEEDINGS-2017.pdf.

Havola, L. (1987). Summarization: Integrating reading and writing. Retrieved 3 June 2017 from https://journal.fi/afinlavk/article/view/57727/19553.

Hirvela, A. (2004). *Connecting reading and writing in second language writing instruction*. Ann Arbor (Michigan): University of Michigan Press.

Ison, D. C. (2012). Plagiarism among dissertations: Prevalence at online institutions. *Journal of Academic Ethics,* 10(3), 227-236.

Ison, D. C. (2014). Does the online environment promote plagiarism? A comparative study of dissertations from brick-and-mortar versus online institutions. *MERLOT Journal of Online Teaching and Learning,* 10(2), 272-282.

Janopoulos, M. (1986). The relationship of pleasure reading and second language writing proficiency. *TESOL Quarterly*, 20(4), 763-768.

Jewitt, C. (2005). Multimodality, ‘‘reading’’, and ‘‘writing’’ for the 21st century. *Discourse: Studies in the Cultural Politics of Education*, 26(3), 315-331. Retrieved 25 May 2017 from http://culturemediaed.pressible.org/files/2011/09/ jewitt_ multimodality.pdf.

Keck, C. (2006). The use of paraphrase in summary writing: A comparison of L1 and L2 writers. *Journal of Second Language Writing*, 15(4), 261-278.

Keogh, C. (2017). Using WhatsApp to create a space of language and content for students of international relation. *Latin American Journal of Content and Language Integrated Learning*, 10(1), 75-10. Retrieved 24 Decemberr 2017 from https://files.eric.ed.gov/fulltext/EJ1152899 .pdf.

Kissner, E. (2006). Summarizing, paraphrasing, and retelling: Skills for better reading, writing, and test taking. Ontario (Canada): Pearson Education.

Krashen, S. (2003). Explorations in language acquisition and use: The Taipei lectures. Portsmouth (New Hampshire): Heinemann.

Krashen, S. (2004). *The power of reading*. Portsmouth (New Hampshire): Heinemann.

Krashen, S., & Lee, S.-Y (2004). Competence in foreign language writing: Progress and lacunae, *On Cue*, 12(2), 10-14. Retrieved 27 May 2017 from http://www.sdkrashen.com/content/ articles/progress_in_l2.pdf.

Kymes, A. (2005). Teaching online comprehension strategies using think-alouds. *Journal of Adolescent & Adult Literacy,* 48(6), 492-500.

Lee, S.-Y. (2001). *What makes it so difficult to write*. Taipei (Taiwan): Crane Publishing Company.

Leingang, M. (2006). Ohio college stung by plagiarism charges. *The Washington Post* Retrieved 19 May 2017 from http://www.washingtonpost.com/wpdyn/content/article/2006/08/21/ AR2006082100068.html.

Mahmoud, S. S. (2014). Email and Facebook to promote Foundation Year students’ EFL writing at King Abdul-Aziz University. *International Review of Social Science and Humanities*, 6(2), 157-172. Retrieved 21 May 2017 from http://www.irssh.com/yahoo_site_admin/assets/docs/16_IRSSH-793-V6N2.39185354.pdf.

Moon, J. (2008). L2 children and writing. *ELT Journal,* 62(4),398-400. Retrieved 30 March 2017 from http://eltj.oxfordjournals.org/content/62/4/398.short.

Nakamoto, S. (2005). Motivating students in EFL classes with synchronous chat. *Language and Learning Technology,* 1-6 Retrieved 19 May 2014 from http://de.hpu.edu/hnguyen/Nakamoto.pdf.

National Reading Panel (2000). Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implication for reading instruction: Reports of the subgroups. Washington, DC: National Institute of Child Health and Development. Retrieved 30 May 2017 from https://www.nichd.nih.gov/publications/ pubs/nrp/Documents/report.pdf.

Obeiah, S. F., & Bataineh, R. F. (2015). Does scaffolding-based instruction improve writing performance? The case of Jordanian EFL learners. *Lublin Studies in Modern Languages and Literature*, 39*(*2), 106-123.

Obeiah, S. F., & Bataineh, R. F. (2016). The effect of portfolio-based assessment on Jordanian EFL learners' writing performance. *Bellaterra Journal of Teaching and Learning Language and Literature*, 9(1), 32-46.

Pecorari, D. (2003). Good and original: Plagiarism and patchwriting in academic second language writing. *Journal of Second Language Writing*, 12(4), 317-345.

Postle, K. (2009). Detecting and deterring plagiarism in social work students: Implications for learning for practice. *Social Work Education,* 28(4), 351-362.

Rambe, P., & Bere, A. (2013). Using mobile instant messaging to leverage learner participation and transform pedagogy at a South African University of Technology. *British Journal of Educational Technology*, 44(4), 544-561. Retrieved 23 December 2017 from https://pdfs.semanticscholar.org/499f/5b1a0aed3c2136ee4f2e4d897838 ce22fc47.pdf.

Rambe, P., & Chipunza, C. (2013). Using mobile devices to leverage student access to collaboratively-generated resources: A case of WhatsApp instant messaging at a South African university. *Proceedings of the 2013 International Conference on Advanced ICT and Education* (pp.331-337). Retrieved 24 December 20017 from http://download.atlantis-press.com/php/download_paper.php?id=8846.

Riyanto, A. (2013). English language learning using 'WhatsApp' application. Retrieved 22 December 20017 from https://akhmadriyantoblog.wordpress.com/2013/07/21/english-language-learning-using-whatsapp-application/.

Shanahan, T. (1997). Reading and writing relationships, thematic units, inquiry learning… In pursuit of effective integrated literacy instruction. *The Reading Teacher*, 51(1), 12-19.

Shi, L. (2004). Textual borrowing in second-language writing. *Written Communication*, 21(2), 171-200.

Song, H. (2000). A study of the teaching of reading English as a foreign language in Korea. *The Journal of English Education*, 55, 367-388.

Spratt, M., Pulverness, A., & Williams, M. (2005). *The TKT Teaching Knowledge Test Course. Cambridge:* Cambridge University Press. Retrieved 13 May 2017 from http://assets.cambridge.org/97805216/09920/sample/9780521609920ws. pdf.

Stacia, A. (1997). Less is more? How to teach summary writing. Retrieved 15 May 2017 from http://busyteacher.org/6214-how-to-teach-summary-writing.html.

Tribble, C. (1996). *Writing*. Oxford: Oxford University Press.

Unsworth, L. (2001). Teaching multiliteracies across the curriculum: Changing contexts of text and image in classroom practice. Buckingham: Open University Press.

Walker, J. (2010). Measuring plagiarism: Researching what students do, not what they say they do. *Studies in Higher Education,* 35(1), 41-59.

Warschauer, M. (1997). Computer mediated collaborative learning: Theory and practice. *The Modern Language Journal*, 81(4), 470-481.

Wu, C. P. (2013). Writing performance, strategy use and students' perceptions of wiki-based collaborative summary writing in an EFL context. *International Journal of Arts and Commerce*, 2(6), 166-174. Retrieved 13 May 2017 from http://www.ijac.org.uk/images/frontImages/gallery/Vol._2_No._6/16.pdf.

Yang, S. C., & Chen, Y.-J. (2007). Technology-enhanced language learning: A case study. *Computers in Human Behavior,* 23(1), 860-879.

Ybarra, R., & Green, T. (2003). Using technology to help ESL/EFL students develop language skills. *The Internet TESL Journal,* 7(3). Retrieved 13 May 2017 from http://iteslj.org/Articles/Ybarra-Technology.html.

Yunus, M. M., Salehi, H., & Chenzi, C. (2012). Integrating social networking tools into ESL writing classroom: Strengths and weaknesses. *English Language Teaching,* 5(8), 42-48. Retrieved 21 May 2017 from http://www.ccsenet.org/journal/index.php/elt/article/view/18613/12330.