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Developing Sustainable Email Pragmatic Competence for EFL Learners through Reformulation

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Abstract: L2 learners' email requests to authority figures generally contain pragmatic infelicities, requiring corrective feedback to enhance L2 learners' knowledge of email pragmatics. This study investigated the effectiveness of reformulation, a feedback strategy for writing, for L2 learners of different proficiency levels in an eight-stage collaborative email writing task: (1) composing (pre-test), (2) reformulation and a native speaker model, (3) training, (4) noticing, (5) stimulated recall (reinforcement of noticing), (6) rewriting (the immediate post-test), (7) delayed post-test, and (8) interview. The participants were four pairs of EFL learners, two with high and two with low proficiency in English. The analysis of data included (1) learners' pair talks, (2) the number of changes noticed and unnoticed by the learners in the reformulations and the native speaker model, (3) the number of revisions matching the reformulations and the native speaker model on the immediate and delayed post-tests, and (4) learners' responses to interviews. The results suggest that reformulation is effective for L2 learners of different proficiency levels, and the enhanced email competence was sustained for at least four weeks. The learners' positive perceptions of reformulation also support its effectiveness. In addition, pedagogical implications are provided for language teachers for the implementation of this feedback approach.

Keywords: reformulation; native speaker model; collaboration; noticing; email pragmatics

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1. Introduction

The globalization and internationalization occurring in this century have led to many changes in the overall life of society. To respond to these changes, education in the 21st century must be able to develop students with competencies that can meet the needs of society as well as help students cultivate skills that are sustainably useful. The competencies or skills that students need to master to be successful and sustainable in work and life include communication, collaboration, critical thinking and creativity (4Cs) [1]. The 4Cs are important skills that are valued in all professions and fields, so they are recommended for use at various levels and in different learning settings. In the learning context of English as a foreign language (EFL), one of the main objectives of teaching and learning English is to enable EFL learners to communicate in English effectively in real-life situations [2]. In the information or digital age of the 21st century, the ability to communicate through writing (e.g., formal letters, email, online messaging) is particularly essential due to the increasing use of computers and networks to organize and transmit information. To prepare EFL learners with sustainable communication abilities in written English, the implementation of instructional strategies that help develop writing skills is deemed to be necessary.

Collaboration, the second of the 4Cs, deserves special attention because language learning is viewed as a social activity, according to Vygotsky's sociocultural theory [3]. This theory, based on the concept of the zone of proximal development (ZPD), suggests that learning occurs when a more competent person provides scaffolded assistance to a novice within the ZPD until he/she is able to complete the task independently. Donato [4]

further extended such expert–novice scaffolding to novice–novice scaffolding, in which L2 learners work together, pool linguistic sources, and share knowledge with one another as they collaboratively engage in complicated language tasks. Therefore, collaboration should be integrated into the language curriculum to help L2 learners to acquire 21st century skills and to develop key competencies for sustainable development throughout their lives.

One of the approaches to the implementation of collaboration in a language classroom is the use of reformulation, which can be done either individually or collaboratively. In L2 writing, reformulation, defined as a form of written recasts to give constructive feedback to learners, has been largely examined with individual learners in three basic stages: (1) composing a draft based on a prompt, (2) noticing the differences between the draft and the reformulation of it, and (3) rewriting the draft. Only a handful of studies have been conducted to explore the use of this feedback strategy in a collaborative context. More research is therefore called for to investigate the effectiveness of reformulation when L2 learners are working collaboratively on a writing task.

2. Literature Review

2.1. Reformulation as a Feedback Strategy for Writing

Reformulation, developed by Cohen [5] from Levenston [6], is a strategy used to provide writing feedback for intermediate and advanced L2 learners to enhance their writing ability. It is defined as "having a native writer of the target language rewrite the learner's essay, preserving all the learner's ideas, making it sound as nativelike as possible" [5] (p. 6), and is consequently seen as a form of written paraphrase. Unlike traditional feedback methods in L2 writing instruction, the reformulation strategy provides personalized native speaker revision without any marks on the written text, making the learner feel less intimidated and more comfortable because the work is still considered his/her own. Nevertheless, the traditional method may cause frustration and disappointment because the written text is often covered with a large number of teacher corrections, which largely focus on surface issues such as vocabulary, grammar, mechanics, and so on. Conversely, reformulation goes beyond the "surface features of the text only" [7]; it provides not merely positive but negative evidence of language input as well [8], and it prompts learners to concentrate on higher-level phenomena such as stylistics, cohesion and coherence [9,10]. In other words, learners may find that reformulation involves not only "an erroneous form being replaced by a correct one", but also "a less appropriate form being replaced by a more appropriate one within the given context" [10] (p. 1).

The reformulation strategy is often used in multi-stage writing activities. Its employment comprises three basic stages: (1) the composing stage, where learners respond to writing prompts, including a series of comic strips, assigned scenarios, or a dictogloss; (2) the noticing stage, where learners are encouraged to compare the original text with a reformulation of it done by a native speaker of the target language and try to notice the differences between the two versions; and (3) the rewriting stage, where learners revise the text based on what they have acquired in the noticing stage. This noticing stage is theoretically based on two hypotheses. One is Schmidt's Noticing Hypothesis [11], which states that a second language learner acquires the language only when he/she consciously notices the target-like form presented in the comprehensible input [12]. The other is Swain's Output Hypothesis [13], which states that "output is one of the triggers for noticing" (p. 373); from output, the learner is most likely to see the limitations of his/her second language knowledge and try to find better ways to express meaning.

A body of research has focused on the effectiveness of the reformulation strategy. One of the major findings reported to date is that L2 learners' language proficiency seems to play a role in the use of reformulation, as it affects the quality of noticing. For example, Qi and Lapkin's case study [14] of two Mandarin-speaking learners indicated that the learner with advanced English proficiency produced more language related episodes (LREs), correctly resolved LREs, and accepted reformulation with a reason more frequently than the learner with low intermediate English proficiency. Similarly, Lapkin, Swain and Smith [15] worked

with four pairs of Canadian French immersion learners. The results showed that the strong pair with higher proficiency produced more contexts for French pronominal verbs, revealed more detailed noticing of the reformulations and provided richer collaborative dialogues in each task than the weak pair with lower proficiency. In Hanaoka's [16] study, advanced Japanese learners of English noticed more problems than intermediate learners, though the difference did not reach statistical significance.

Furthermore, there are variations in the implementation of the reformulation strategy in a multi-stage writing task. First, reformulation can be done individually [14,16], in pairs [15], or in groups [17]. Second, a stimulated recall (SR) session can be inserted between the noticing and rewriting stages. During stimulated recall, a videotape of the noticing phase is played back, and the learner is asked to comment on his/her thoughts [18–20]. Such a session can be seen as an opportunity for the learner to reinforce what has been learned in the noticing phase. Third, a native speaker model can be provided to learners [16,21,22]. Providing a native language model can be seen as a complement to reformulation, as the latter sometimes may not represent a good piece of native language writing because it is limited by its fidelity to the original thinking of the L2 learners.

2.2. Email Requests to Authority Figures

Email communication has the longest history of any form of cyber communication, such as Facebook, LINE, WeChat or Instagram. Since email has been extensively used worldwide, email pragmatics have drawn L2 researchers' attention for the past decades. A number of studies have been conducted, and their findings have shown that L2 learners tend to make pragmatic errors when writing email requests to authority figures. Making a request implies that the speaker is in an attempt to get the hearer to do something in response to what he/she says [23]. The successful performance of email requests therefore requires high pragmatic competence [24–27], which refers to the ability to use language appropriately in social contexts [28] and is the key to effective communication.

Pragmatic competence in L2 context has proved to be much more challenging [29,30]. Indeed, previous research has indicated that infelicities are often found in L2 learners' emails to authority figures. For example, Hartford and Bardovi-Harlig [31] collected emails produced by 34 native speakers (NS) and 65 nonnative speakers (NNS) written to the authors over a period of one year. The findings showed that the negative affect responses produced by NNS were often caused by infrequent use of syntactic (e.g., past tense) and lexical (e.g., "please") downgraders; the employment of an imposed, unreasonable personal time frame (e.g., " . . . Can I receive your comments on chapter 1 and 2 before I leave for Japan"); no acknowledgement of the cost of requests to the faculty (e.g., "Please read my thesis and give me your comments"); and the provision of student-centered explanations for the faculty to comply with the requests (e.g., "If I can meet you in July, I believe that I can finish my thesis and be ready for my defense").

Chen [32] compared the email requests to professors made by 30 Taiwanese overseas students and 25 American students. A total of 104 email requests were analyzed, with 60 emails provided by the Taiwanese speakers and 54 by the American speakers. The major difference between the Taiwanese and American speakers was that the former group tended to offer lengthy, narrative explanations before requests were made, while the latter would make straightforward requests at the beginning of the emails but tried to minimize the face threat by allowing room for negotiation. Chen attributed such differences to the fact that the Taiwanese speakers perceived themselves as lower-status, powerless figures, and professors as higher-status, authoritative figures; therefore, they employed Chinese rhetoric and politeness strategies when making requests to their professors.

Biesenbach-Lucas [33] examined email requests by 382 NSs and 151 NNSs that were sent to professors to ask for appointments, feedback, and extensions of due dates. She found that the NNSs demonstrated less flexibility in syntactic modifications, while the NSs demonstrated greater variability in this respect. Second, the NNSs tended to use the politeness marker please more frequently, while the NSs tended to use subjectivizers (e.g.,

'I was wondering') more frequently. Finally, in request situations, the NNSs did not use as many impersonal forms (e.g., 'Your help would be appreciated very much') as the NSs did, implying that they were not aware that formal requests in business writing are usually formed impersonally.

More recently, Economidou-Kogetsidis [24,25] examined a corpus of 200 authentic emails sent to 11 faculty members by Greek Cypriot students in English. In the 2015 study, she selected six emails and asked 24 university lecturers from 12 universities in the United Kingdom to evaluate these emails through an online perception questionnaire of items scored on a 5-point Likert-type scale. The findings showed that the emails which received the most negative evaluation contained no salutation, opening/greeting, syntactic mitigation, external mitigation, closing, or acknowledgement of imposition. In her 2018 study, Economidou-Kogetsidis again examined all the 200 emails, this time in terms of ranking of imposition, address forms, and degree of directness to achieve e-politeness. The results indicated a correlation between formal address forms and high directness. Contrary to our expectations, these Greek learners intended to address the faculty members in a formal way; however, unfortunately, they employed mostly direct request strategies, which made their emails sound impolite.

In summary, the above review shows that L2 learners' email requests to authority figures generally contain a variety of pragmatic infelicities, which will require explicit instruction and corrective feedback [34] for enhancement of their email literacy. As one form of corrective feedback, reformulation has shown its effectiveness in L2 writing, for learners can benefit from noticing the differences between the original and the reformulated versions. In addition, learners' proficiency and the provision of a native speaker model seem to affect the effectiveness of reformulation to a certain extent. To shed light on the existing research, the present study aims to investigate the extent to which reformulation benefits L2 learners at different levels of proficiency in a collaborative email writing task. Four research questions are therefore posed.

(1) What do learners of different proficiency levels focus on when working on an email task?
(2) What do learners of different proficiency levels notice while comparing emails they have written to native speaker reformulations of those emails and a native speaker model?
(3) To what extent do learners of different proficiency levels revise their original emails based on the reformulations and native speaker model? Can such noticing effects be sustained for at least four weeks?
(4) What are the learners' perceptions of all stages of the task?

The significance of these research questions is as follows. First, they help to understand the performance of learners from different proficiency groups as they compose a draft collaboratively, notice the difference between the draft and a reformulated version and a native speaker model, and rewrite the draft individually. This, in turn, makes the role of language proficiency and the effectiveness of the provision of a native speaker model in the use of reformulation, more transparent. Second, they help in recognizing whether learners construct knowledge about email pragmatics through the noticing, and whether such noticing effect can be sustained. Finally, as the learners are involved in a multi-stage email writing task, it is important to understand how they perceive each stage of the task in addition to finding out how they perform.

3. Methodology

3.1. Participants

The participants were four pairs of EFL learners from a university of technology in central Taiwan. All of them were English majors. They were divided into high-proficiency pairs and low-proficiency pairs according to their TOEIC scores. The TOEIC scores of the high-proficiency pairs were between 800 and 950, and those of the low-proficiency pairs, between 450 and 600. We considered these two score ranges to be sufficient to differentiate

the participants' proficiency levels. Table 1 below presents the information about the participants.

Table 1. Information about the participants.

4 Pairs	Name	Gender	Age	TOEIC Scores	CEFR
		High proficiency			
1	Daniel	Male	21	935	B2 (Vantage)
	Kevin	Male	22	925	B2 (Vantage)
2	Jharna	Female	21	895	B2 (Vantage)
	Emma	Female	21	820	B2 (Vantage)
		Low proficiency			
3	Venus	Female	21	600	B1 (Threshold)
	Kennedy	Male	22	550	B1 (Threshold)
4	Jennifer	Female	19	510	A2 (Waystage)
	Gina	Female	21	485	A2 (Waystage)

In addition to the eight EFL learners, there were two native speakers of English invited to participate in this study. The first native speaker held a B.A. degree in creative writing and had experience of teaching English as a foreign language, and for academic purposes, of more than 30 years. He was invited to provide a native speaker model for an internship advertisement. The second native speaker was a Ph.D. student in social sciences in Taiwan. Both Mandarin Chinese and English were his first languages. He was invited to reformulate the pre-test productions made by the EFL learners.

3.2. Instruments

The instrument was an internship advertisement requiring the participants to send an email request to the personnel manager at a publishing company. The participants needed to assume they were applicants whose qualifications met the company's needs, and they were eager to obtain this internship opportunity. Unfortunately, they had been nominated by their school to participate in the 2021 Asian College Tennis Championships from 8 to 12 July. The time frame happened to conflict with the period of the internship. Therefore, the participants needed to express their interest in this internship and ask if there was any way to remedy the time conflict.

This internship advertisement was designed to approximate the learners' real-life experience. We incorporated into this situation three social variables: social distance (D), social power (P), and ranking of imposition (R) [35]. Social distance refers how close the person making the request and the person receiving the request are. Social power refers to the power relationship between the two interlocutors. The ranking of imposition signifies how big the request is.

This was a PDR-H situation (i.e., high power, large distance and high imposition). The social distance was large because the student and the manager did not know each other. In terms of social power, this was a low to high situation because the student needed to write an email to a higher-status manager at a publishing company. The ranking of imposition was also high, because the student had to request five days of leave during the internship period.

3.3. Procedures

The present study was implemented in the following stages.

(1) Stage 1: Pre-test

The four pairs of learners worked together to construct an email request of at least 150 words in response to the internship advertisement within 60 min. They were not allowed

to consult any websites, dictionaries or teachers while completing the task. Following Hanaoka [16], the learners were also asked to jot down any problems they noticed while writing the draft, such as "I do not know how to say X in English" or "I am not sure if X is correct." After completing the draft, they were reminded to proofread the email before submitting it. Such a reminder was meant to ensure that the email reflected their best performance and that possible errors were not "slips" that learners could correct by themselves [21]. The learners' pair talk, which was in English or Chinese, was videotaped and transcribed verbatim for further coding.

(2) Stage 2: Reformulation and native speaker model

Once the pairs completed their tasks, a native English speaker was invited to reformulate their emails. When reformulating, this native speaker needed to "revise the student's text to reflect target-language usage while preserving the student's original meaning" [19] (p. 291). In addition, another native English speaker was asked to construct an email for the internship advertisement as the model for the participants.

(3) Stage 3: Training

According to Cohen [5], most learners need help when comparing the original draft with the reformulated version and the native speaker model. To ensure that such comparisons would be "eye-opening and engaging" (p. 17), a short training session was provided to familiarize learners with the comparison procedure. The four pairs of learners were first asked to compare the two versions and write down what they noticed on a checklist. Afterwards, a group discussion was held for all pairs to report and exchange the differences they found [17].

(4) Stage 4: Noticing

After the training session, each pair received the original, reformulated and native speaker model versions. They were given enough time to note and discuss the differences across the three versions. During the noticing process, they needed to jot down what they noticed. The participants were encouraged to use sentences such as "I could not say X, but (A) puts it Y" [16] (p. 463). The pair talk could be in English or Chinese and was videotaped.

(5) Stage 5: Stimulated recall

In this stage, the videotaping of Stage 4 was observed by the first author and her assistant to determine what differences the pairs noticed between the original and reformulated versions, as well as those between the original versions and native speaker model. Then, the pairs were asked to watch the videos, stop at each relevant place, and comment on their thoughts while they were making comparisons.

(6) Stage 6: Immediate post-test

To examine how much the learners gained from the noticing and stimulated recall stages, each learner received the original email created by his/her pair and was asked to rewrite the email independently.

(7) Stage 7: Delayed post-test

The purpose of this stage was to see how long the noticing effect could last. Therefore, four weeks after the immediate post-test [36–38], the participants received the original email again, and each individual was asked to rewrite it.

(8) Stage 8: Interview

Semi-structured interviews were conducted to probe the individual learner's perceptions of all the stages in the task.

3.4. Data Analysis

The first research question asked what learners focused on when working on an email task. To answer this question, learners' pair talk in the pre-test stage was analyzed. Portions of the transcripts were first coded to reach consensus. Then, the transcripts were coded individually by the first and second authors. Disagreements were resolved through discussion. The two authors reached 85% consensus on the coding.

Following Yang and Zhang [21], learners' pair talk was analyzed with respect to CREs (content-related episodes), in which the prompt was negotiated and ideas were generated, and LREs (language-related episodes), in which the learners attempted to resolve lexical, grammatical or discourse problems. The LREs were further divided into lexical-based (L-LREs), form-based (F-LREs), and discourse-based (D-LREs) episodes [14]. L-LREs were defined as pair talk segments about adverbs, nouns, adjectives, and verbs. F-LREs were defined as those about article gender, possessive pronoun/article, preposition, preposition + article, pronoun reference, sentence structure, spelling, pronominal verb, and verb form. D-LREs were those about discourse markers, logical sequencing (i.e., coherence and coherence), tense sequencing, temporal sequencing, inter-sentential clarity, text structure, and stylistics [19,21].

The second research question asked what learners of different proficiency levels noticed while comparing emails they had written to native speaker reformulations and a native speaker model. To answer this question, the number of reformulations made to the original email was first counted. Then, the number of reformulations noticed and unnoticed by the four pairs was calculated. The same procedure was applied to the comparison between the original draft and the native speaker model.

The third research question asked the extent to which learners of different proficiency levels revised their original emails based on the reformulations and native speaker model, and whether such noticing effects could be sustained for at least four weeks. To answer this question, the total numbers of changes made to both the immediate and delayed post-tests were counted. Next, these changes were examined and assigned to either "exact match group" or "similar match group". The exact match group contained changes that corresponded exactly to the reformulation or native speaker model, while the similar match group consisted of acceptable changes that were not identical to the reformulation or native speaker model. Finally, the numbers of changes in the immediate and delayed post tests were compared to see whether the noticing effect had persisted over time.

The fourth research question asked about the learners' perceptions of all stages in the collaborative email writing task. To answer this question, the interview protocols were examined thoroughly through content analysis. Some responses from the learners of different proficiency levels are presented and further discussed below.

4. Results

4.1. Results Related to RQ1

The first research question addressed what the learners focused on when working on an email task. The numbers of CREs and LREs produced by the learners in the different proficiency groups were counted and are illustrated in Table 2.

As shown in Table 2, there was a general tendency for the learners of high proficiency to produce more CREs (High: 43, Low: 38) and fewer LREs (High: 34, Low: 37). In the CREs, the learners focused more on idea generation (High: 41, Low: 33), with the high-proficiency learners generating more than the low-proficiency learners. On the other hand, the learners paid little attention to content clarification (High: 2, Low: 5), with the high-proficiency learners paying less attention to it than the low-proficiency learners. As for LREs, both proficiency groups produced more L-LREs (High: 22, Low: 26), followed by D-LREs (High: 7, Low: 6); F-LREs were produced the least (High: 5, Low: 5).

Table 2. Number of the CREs and LREs for the learners.

	Proficiency	High	Low
CREs	Content clarification	2	5
	Idea generation	41	33
	Subtotal	43	38
LREs	L-LREs	22	26
	F-LREs	5	5
	D-LREs	7	6
	Subtotal	34	37
CREs & LREs	Total episodes	77	75

The analysis of the results showed that both high- and low-proficiency learners seemed to have spent less time clarifying the email task and more time generating ideas to complete the task. They also focused on discussing vocabulary more than they did on form and discourse.

The following excerpts from the learners' pair talks showed what they discussed when engaging in this email task. Excerpt (1) focused on the discussion related to CREs. Jennifer and Gina from the low-proficiency group discussed the content related to the schedule conflict between internship and tennis contest. Excerpt (2) centered on the discussion associated with LREs. Kevin and Daniel from the high-proficiency group confirmed with each other, and tried to organize the three points they mentioned to make the text cohesive.

Excerpt (1). Content clarification in CREs for the low-proficiency group.

Jennifer:	When does the holiday start? July 1st.
Jennifer:	For the internship? No. What date is it for the internship to begin?
Gina:	Isn't it written here?
Jennifer:	Why does the internship conflict with the date?
Gina:	It should be this?
Jennifer:	Yes.

Excerpt (2). The cohesion of D-LREs for the high-proficiency group

Kevin:	Then we start to introduce whether we have compliance with every point.
Daniel:	Let's write it down first.
Kevin:	Proficient in English, impeccable grammar skills
Daniel:	The second point is "being able to use Microsoft word".
Kevin:	Then, online outreach promotion using social media.

4.2. Results Related to RQ2

The second research question asked what the learners noticed while comparing the emails they wrote with the reformulation of it and the native speaker model. The numbers of reformulations and differences in the native speaker model noticed and unnoticed by the learners of different proficiency levels were calculated.

Table 3 shows that most of the reformulations were made with respect to form (51/87, 58.62%), followed by lexis (25/87, 28.74%) and discourse (11/87, 12.64%). However, the distributions were different between the high- and low-proficiency groups. In the high-proficiency group, the reformulations occurred mostly on form (44/55, 80%), followed by lexis (9/55, 16.36%) and discourse (2/55, 3.64%). In the low-proficiency group, however, the reformulations largely centered on lexis (16/32, 50%), followed by discourse (9/32, 28.12%) and form (7/32, 21.88%). Such findings can likely be ascribed to the high-proficiency learners' production of sentences of greater complexity, which led the native speaker reformulator to provide more feedback on rephrasing and word addition/deletion. The low-proficiency learners, confined by their linguistic abilities, may have had insufficient vocabulary knowledge and thus received more reformulations on lexis. Unfortunately,

Table 3 reveals that the proportions of the reformulations noticed by the learners were not very high in either proficiency group. Although the high-proficiency group noticed all the cohesions in D-reformulations (2/2, 100%), they only noticed half of the F-reformulations (22/44, 50%). The number was even smaller for L-reformulations (2/9, 22.22%). As for the low-proficiency learners, the most noticed reformulations were those for achieving logical sequencing in D-reformulation (7/9, 77.78%). However, the items noticed by these learners were not very satisfactory in terms of F-reformulations (2/7, 28.57%) and L-reformulations (7/16, 43.75%).

Table 3. Total number of reformulations noticed/unnoticed by the learners.

Proficiency	Reformulations (Changes)		Noticed		Unnoticed	
	High	Low	High	Low	High	Low
L-reformulations						
Article	2	0	1	0	1	0
Verb	2	3	0	3	2	0
Preposition	2	6	0	2	2	4
Adjective	1	0	0	0	1	0
Adverb	2	3	1	1	1	2
Noun	0	4	0	1	0	3
Subtotal	9	16	2	7	7	9
Total L-reformulations	25		9		16	
F-reformulations						
Verb tense	7	4	5	0	2	4
Verb form	1	0	0	0	1	0
Spelling	2	0	0	0	2	0
Rephrasing	15	0	12	0	3	0
Adding words	8	0	1	0	7	0
Deleting words	8	0	1	0	7	0
Sentence structure	3	2	3	2	0	0
Possessive marker	0	1	0	0	0	1
Subtotal	44	7	22	2	22	5
Total F-reformulations	51		24		27	
D-reformulations						
Cohesion	2	0	2	0	0	0
Achieving logical sequencing	0	9	0	7	0	2
Subtotal	2	9	2	7	0	2
Total D-reformulations	11		9		2	

With respect to the native speaker model (see Table 4), it is interesting to note that both proficiency groups focused only on the discourse level. The high-proficiency learners were able to identify 10 discourse features, mostly for cohesion (7/10, 70%), followed by logical sequencing (2/10, 20%) and stylistic items (1/10, 10%). The low-proficiency learners noticed 9 discourse features, among which were 4 (44.44%) stylistic items and 5 (55.56%) logical sequencing items. This result suggests that, unlike with the reformulation, the learners paid attention to the model text only at the discourse level. Moreover, noticing appeared to be more challenging for the low-proficiency learners with the native speaker model than with the reformulations.

Table 4. Total number of the native speaker model noticed/ unnoticed by the learners.

	Noticed		Unnoticed	
	High	**Low**	**High**	**Low**
Discourse:				
Cohesion	7	0	0	0
Stylistic	1	4	0	3
Achieving logical sequencing	2	5	0	0
Subtotal	10	9	0	3
Total Discourse	19		3	

4.3. Results Related to RQ3

The third research question addressed the extent to which the learners revised their original emails based on the reformulation and the native speaker model, and if such noticing effects could be sustained for at least four weeks. The total numbers of changes the learners made on the immediate and delayed post-tests were calculated and are shown in Tables 5 and 6.

In terms of the immediate post-test, following Yang and Zhang [21], the changes considered better were those that matched the reformulation or the model text; acceptable changes were those that were similar to the reformulation or the model text. Table 5 indicates that more than half of the revisions by the learners were better or acceptable changes (High: 37/48, 77%; Low: 29/33, 87%). The post-test results suggest that the learners of different proficiency levels made improvements to their writing.

With respect to the delayed post-test, Table 6 shows that more than half of the revisions by the learners were also better or acceptable changes (High: 34/46, 73%; Low: 23/29, 79%). The delayed post-test results showed that the learners from both proficiency groups could remember most of the changes they noticed for at least four weeks, suggesting that the noticing effect could be sustained for at least four weeks. The percentages of better or acceptable changes on the post-test (High: 77%; Low: 87%) and delayed post-test (High: 73%; Low: 79%) also support the sustainability of the noticing effect.

Table 5. Total numbers of changes by the learners on the immediate post-test.

Students	**Total Number of Changes**	**Better or Acceptable Changes**		
		Matching the Reformulation	**Matching the Model**	**Acceptable**
High-proficiency				
Daniel	11	1	1	5
Kevin	10	1	0	6
Emma	13	3	0	8
Jharna	14	5	0	7
Total	48	10	1	26
Low-proficiency				
Kennedy	10	4	1	5
Venus	9	3	1	3
Gina	6	1	0	4
Jennifer	8	1	0	6
Total	33	9	2	18

Table 6. Total numbers of changes by the learners on the delayed post-test.

Students	Total Number of Changes	Better or Acceptable Changes		
		Matching the Reformulation	Matching the Model	Acceptable
High-proficiency				
Daniel	11	1	1	6
Kevin	12	3	0	5
Emma	10	2	0	6
Jharna	13	3	0	7
Total	46	9	1	24
Low-proficiency				
Kennedy	9	2	2	3
Venus	9	2	1	5
Gina	5	1	0	3
Jennifer	6	2	0	2
Total	29	7	3	13

4.4. Results Related to RQ4

The fourth research question was meant to increase understanding of the learners' perceptions on the use of reformulation in this collaborative email writing task. The learners' responses were analyzed through content analysis and categorized into three major themes: collaboration, retention and comparison.

In terms of collaboration with peers, all the learners in the present study expressed that the interactions between their partners enabled them to help and learn from each other. In other words, collaboration leads to interaction, which in turn promotes learning. Through interaction, the learners could exchange ideas, understand different perspectives, negotiate the divergences, and make appropriate decisions about the content and language. Excerpts (1) and (2) show that the learners liked working collaboratively to complete the email task

Excerpt (1):

> Daniel (High): *The most impressive part was the moment when Kevin and I were exchanging our thoughts. I, myself, think that my proficiency in language is good enough for the task, but by seeing things from Kevin's perspective—we had very different ways of thinking, which was enlightening. All in all, the most impressive part for me was the interaction between Kevin and me.*

Excerpt (2):

> Kennedy (Low): *I had a very good experience. . . . . It was good that we all had a partner to work with. The benefit of collaboration was that we could exchange thoughts and help each other with correcting mistakes.*

The second issue brought up in the interview by most learners was that, unlike traditional teacher correction, reformulation provided them with an opportunity to learn vocabulary, phrases and writing styles more effectively. Excerpt (3) shows that Emma from the high-proficiency group felt that she could strengthen and sustain what she had gained from the process of noticing.

Excerpt (3):

> Emma (High): *I think that this reformulation method is good. I think this method made me remember the corrections more . . . By comparing my draft with the teacher's reformulation, I'd become aware of the mistake that I had made and try to avoid making the same mistake the next time. In the traditional method, the teacher would correct my writing and give it back to me, and I would just browse through the corrections and forget about them pretty soon.*

Finally, the learners also commented on reformulation and the native speaker model. All the learners mentioned that both approaches increased their email literacy, but their effectiveness was represented in a different way. Generally speaking, the reformulated version helped the learners to correct errors, while the native speaker model stimulated new ideas. Moreover, although the native speaker model was preferred by most learners, the high-proficiency learners seemed to have benefited more from it, for they could identify and imitate the lexical, syntactic or discourse details in the model. On the other hand, reformulation seemed to be more suitable for the low-proficiency learners, as they could make one-on-one comparisons between the original and the reformulated versions. Excerpts (4) and (5) present the high- and low-proficiency learners' opinions of reformulation and the native speaker model.

Excerpt (4):

> Jharna (High): *The reformulation version helped me correct my mistakes. The native speaker's model was more like something for me to imitate. I could combine the original thoughts and the ideas I got from the model. I think it's a great way to learn how to compose an email. I liked the model better because I like to learn things by imitation. I could see a mistake, internalize the feedback and turn it into my own learning.*

Excerpt (5):

> Jennifer (Low): *I preferred the reformulated version more than the model because of my own English ability. The model was good, but there was too much for me to learn. So it was good to look at the reformulation. It was easier for me.*

5. Discussion

This study explored the effectiveness of the reformulation strategy in an eight-stage collaborative email writing task. Four pairs of learners with high and low proficiency were recruited from a university of technology in central Taiwan. The data included the learners' pair talk; pre-, post-, and delayed post-test results; and perception interviews. From the collected data, we intended to learn what the learners attended to while working together on this email task; how they compared the original emails with the reformulations and the native speaker model; whether their email literacy was improved by this writing task; and how they perceived this multistage task.

First, the analysis showed that the learners of different proficiency levels had three things in common. They tended to focus more on CREs than LREs, which means more on idea generation than on content clarification in CREs and more on L-LREs than on F-LREs or D-LREs. Unlike the learners in a study by Yang and Zhang [21], who produced more LREs than CREs, the learners in this study appeared to expend more effort on planning how to write the email instead of focusing on the language issues. With regard to LREs, similar to the learners in Hanaoka [16], the learners in the present study also concentrated more on vocabulary than on form and discourse, suggesting that the problems the learners faced during the composition process were largely lexical. In fact, vocabulary is the essential element in constructing sentences [39], and vocabulary knowledge is closely related to writing quality regardless of different genres [40,41]. Lack of vocabulary causes L2 learners to face challenges and to feel that writing is a difficult task [42–45]. To help L2 learners to deliver their thoughts in writing more effectively, teachers are encouraged to build up a good vocabulary repertoire for learners prior to assigning actual writing tasks.

Second, this study found that the native speaker reformulator provided more F-reformulations than L-reformulations or D-reformulation. However, even though a training session was provided to the learners, more than half of these reformulations were not identified, revealing that the learners of different proficiency levels were unable to effectively notice most of the differences between the emails they had written and the reformulated versions. This result is contrary to Yang and Zhang [21], in which the learners could notice most of the lexical and form-related reformulations. Furthermore, the present study also found that the learners of high proficiency were able to notice more F- and

D-reformulations than were those of lower proficiency. This result suggests that language proficiency played an important role in the use of reformulation because it influenced the quality of noticing. This finding is consistent with Qi and Lapkin [14], Lapkin, Swain and Smith [15] and Hanaoka [16].

One more result which deserves attention is that the learners only paid attention to the discourse level in the native speaker model, implying that the native speaker model was more beneficial at the discourse level [16,21]. In reformulation, a reformulator has less freedom in adding, deleting or restructuring ideas, since they are required to preserve the original thoughts of the student writer. In contrast, the native speaker model represents a good piece of writing and differs largely from the learner's original draft. It is therefore not surprising that such a model directs the learners' attention to the macro- rather than the micro-skills of writing. According to Brown [46], micro-skills of writing include graphemes and orthographic patterns, words and cohesive ties, order patterns and grammatical systems, and so on. On the other hand, macro-skills of writing include rhetorical forms and conventions, communicative functions, linkage between main ideas, supporting details, generalizations and examples, and distinction between literal and implied meanings as well as the development of writing strategies. Although reformulations and native speaker models function in different ways, they complement each other; both are advantageous to increasing learners' email writing abilities. It seems that the native speaker model appears to benefit the macro-skills of writing of the learners, while reformulation tends to develop the learners' micro-skills to a greater extent, especially their form and vocabulary skills.

Third, more than half of the revisions by the learners on the post-test were better and acceptable changes; a similar result was also found in the delayed post-test. Such results suggest that the learners made progress through this multi-stage writing task, [21,22,47], and also that the learning effects were sustained for at least four weeks [16]. The enhanced email writing ability and the sustainability of the learning effect might be attributed to the noticing [19] and stimulated recall stages [18]. The effectiveness of noticing is related to the concept of the role of awareness in language learning, originating from Schmidt's Noticing Hypothesis [11] and Swain's Output Hypothesis [13]. Noticing refers to conscious awareness of the target language, which requires L2 learners' attention to the input so that they can process the input into intake [48,49]. Swain's Output Hypothesis claims that learning takes place when L2 learners either notice what is missing in their own production or notice the discrepancy between their own production and the target language. In the present study, the learners would notice what was different in their original drafts when comparing them with the reformulations and the native speaker model. Furthermore, the noticing effects were reinforced by the stimulated recall stage, in which the learners were encouraged to reflect and comment on what had been previously noticed.

In terms of the learners' overall perceptions, most of the learners considered all the stages of this collaborative email task to be effective, as found in Sulistyo and Heriyawati [47] and Chen and Liu [22], in which the EFL college students had positive attitudes towards the implementation of RTM (reformulation and text modeling) in academic writing classes. The learners' positive perceptions found in this study may be explained as follows. To begin with, this activity provided an opportunity for collaboration during the composing, noticing, and stimulated recall stages. The learners particularly enjoyed exchanging ideas because they could learn from each other through discussion. Such dyadic interaction supports what Donato [4] proposed; there is novice–novice scaffolded assistance as L2 learners collaboratively engage in complex language tasks. The second reason is related to the learners' learning retention. The learners perceived that, through this activity, their memories of the reformulations and native speaker model could last for a longer period of time. In the typical teacher correction approach, the teacher may carefully provide explicit, detailed corrective feedback [50] and return the corrections to learners without asking them to notice the differences between the original and the corrected versions. Third, the learners perceived the reformulations and native speaker model as offering different kinds of assistance in the development of their email writing abilities. The reformulated versions

helped them to correct errors or mistakes, and were more favorable for the low-proficiency learners due to their limited language proficiency. On the other hand, the native speaker model stimulated new ideas, and the high-proficiency learners seemed to benefit more from it.

6. Conclusions

Communication and collaboration, two of the 4Cs, are recognized as essential skills for the 21st century [2,51]. To prepare learners for success in this era [52], teachers are expected to implement instructional strategies that are effective in developing these key competencies. In light of this, the present study aimed to investigate the effectiveness of reformulation (i.e., a strategy for written communication) for L2 learners of different proficiency levels in a collaborative email writing task. The findings showed reformulation to be an effective strategy to improve these learners' email literacy. The interview protocols also showed that the learners generally held positive attitudes toward this strategy. Since reformulation provides chances for collaboration, and its effectiveness in enhancing writing ability is supported by this study, language teachers are encouraged to implement this strategy in their own classrooms to help learners develop and master communication and collaboration skills for the achievement of sustainable development of their lives.

Concerning the implications for pedagogy, one disadvantage of the reformulation feedback strategy is that the entire process may be time consuming for teachers and learners. Teachers have to spend copious amounts of time training and guiding their students and may fail to keep up with the tight class schedule. Learners have to accomplish the tasks step-by-step, which may be fatiguing because of the need to practice over and over again. In view of this, it is suggested that, under time constraints, the process could be simplified such that the learners go through only three basic stages: composing, comparing and rewriting. Another suggestion is that this strategy should be employed in smaller classes instead of large ones for greatest effect. Finally, if the class constitutes a majority of lower-proficiency learners, reformulation alone would likely be sufficient to develop their email writing abilities. On the other hand, if the class is composed of mostly higher-proficiency learners, they can be provided with reformulations and native speaker models at the same time.

Some limitations of the current study pave the way for future research. First, there were only eight participants in this case study, making it difficult to generalize the results for different contexts. More participants will be needed in future studies. Second, the native speaker model appeared to be more beneficial to the higher-proficiency learners than to the lower-proficiency learners. Therefore, the provision of different models suited to the learners' proficiency levels deserves our attention. Finally, the participants worked in pairs in this study, and this dyadic interaction was perceived to facilitate learning by the learners. It is still unclear whether employing the reformulation strategy in groups would yield similar results, since there is scarce research exploring this issue. More studies will be needed to contribute to this body of literature.

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