The Roles of Indirect Asynchronous Electronic Feedback and Direct Corrective Feedback in Improving Students' L2 Writing: A Multiple Case Study of Thai Undergraduate Students

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Abstract

This study investigates the roles of indirect asynchronous electronic feedback (e-feedback) and direct corrective feedback (CF) on calque and collocation errors produced by Thai undergraduate students. The study also explores the factors influencing their ability to benefit from the feedback. Six cases were divided into two groups (Group 1: direct CF and Group 2: indirect asynchronous e-feedback). The participants in Group 1 were asked to write English paragraphs on paper while those in Group 2 wrote using Google Docs software. After completing each writing task regarding the selective feedback on calque and collocation errors, participants were individually interviewed. Findings

revealed that the participants in Group 2 outperformed those in Group 1 when correcting calque errors. However, the participants in Group 1 outperformed those in Group 2 when revising collocation errors. Thus, direct CF is more conducive to writing improvement than indirect asynchronous e-feedback. These findings suggest that an integration of technology in a writing class should be implemented to ensure that EFL learners learn how use digital technology effectively. Moreover, individual differences, for example, carelessness, insufficient English knowledge, the first language, learning styles, and learning strategies played important roles in their ability and inability to respond to feedback.

1. Introduction

In this digital age, writing can be viewed through the lenses of the Internet and social media. Instead of writing on the page, writers can write on the screen to compose and publish their writing online. When technology is integrated into second language writing (SLW), the method of providing students corrective feedback (CF) could possibly be changed from traditional direct CF to electronic feedback (e-feedback).

A number of quantitative studies (e.g., Alshahrani & Storch, 2014; Chandler, 2003; Ferris & Roberts, 2001; Nicolás-Conesa et al., 2019; Shintani & Ellis, 2013) compared the effectiveness of direct CF and indirect CF in correcting students' grammatical errors. Few qualitative studies, however, compare the roles of direct CF and indirect CF in which individualizing written corrective feedback (WCF) for unique student writers have been investigated to determine which factors influence students' ability to benefit from teacher feedback (Ferris, 2006; Ferris et al., 2013; Hyland, 2010; Lee, 2004). Qualitative research is, moreover, suitable for studying digital literacy (Ware et al., 2016). Lexical errors are reasonably the most interesting targets for correction provided to students (Diab, 2015; Truscott, 2007).

Consequently, this study adopts recommendations from the previous studies to conduct a qualitative multiple-case study investigating the roles of indirect e-feedback and direct CF on lexical errors of calques and collocations frequently produced by Thai undergraduate students (Bennui, 2016; Hemchua & Schmitt, 2006; Phuket & Othman, 2015; Suetae

& Yok, 2018; Wongranu, 2017; Yaemtui, 2018). In addition to comparing the roles of these two feedback types on groups of learners, this study examines their roles toward individual students according to the following questions:

> RQ1 - What errors do participants correct and fail to correct when receiving indirect asynchronous e-feedback and direct CF? And how?
>
> RQ2 - What factors (individual and contextual) might influence participants' ability to benefit from indirect asynchronous e-feedback and direct CF?

Selective error correction includes calque and collocation errors. Calque is where an L2 word is created by the literal translation of an L1 word, for example *goldworthy which is literally translated from L1 German "goldwert" and used instead of "precious" in English (James, 1998). However, this notion of calques by James (1998) may have taken a deeper perspective and was primarily based on German/English transfer. Specifically, calques are allied to the characteristics of the different native languages and may be found in long fragments of words in a sentence (Garnier & Saint-Dizier, 2009). An analysis of calque should be based on a comparison between the source and target language. Thus, this study investigates the distinctive characteristics of the Thai language compared to the English language based on the studies of Hemchua and Schmitt (2006), Songamporn (2015), Endoo (2018), and Suetae and Yok (2018). Further explanation of the coding scheme for calque errors developed for this study is included in Appendix A.

Collocation errors include semantic word selection, statistically weighted preferences, and arbitrary combinations (Appendix A). Semantic word selection refers to the semantically wrong selection of words, for example *crooked year (crooked street, crooked smile, or crooked stick) (James, 1998) or the city is *grown (developed) (Hemchua & Schmitt, 2006).

Statistically weighted preferences mean the use of less preferable words in a context where a word used is not wrong in the same way as semantic word selection, but there is a proper word tailored to the situation, for example an army has suffered *big losses (heavy losses)

(James, 1998) or *this sweeping beach offers fine grained white sand and *crystalline water (crystal-clear water)* (Suetae & Yok, 2018).

Arbitrary combinations are lexical errors occurring when a word has the same meaning with another word but does not share the same word use together, for example *make* (not *have an attempt*) and *have* (not *make a try*) (James, 1998). This error type also includes the "irreversible binomials" such as **chips and fish* (*fish and chips)* or **cream and strawberries (strawberries and cream)* (James, 1998).

Two types of CF being studied involve direct CF and indirect asynchronous e-feedback. Direct CF is described as the teacher's correct form which is directly offered to students who read and revise the next draft of their compositions based on simply transcribed corrections of the teacher (Ellis, 2009b). In most current studies of SLW, metalinguistic explanations with/without examples are also included for more information concerning types of errors learners produced and counted as another form of direct CF (Shintani & Ellis, 2013). There has been widespread discussion as to whether or not direct CF is effective in promoting students' long-term acquisition due to its forthright manner. In addition, direct CF seems to be just a simple proofreading exercise in the process of writing and revision rather than increasing students' substantive thought (Sommers, 1982; Zamel, 1982). This, however, contrasts with Van Beuningen et al. (2008) who reported that direct CF and indirect CF have short-term effects on the improvement of students' accuracy, but direct CF has a significant long-term effect.

Direct CF has some benefits for basic-level English students, and direct CF is more suitable when errors are untreatable or focused (Ferris, 2011). There are three benefits of direct CF according to Chandler (2003). That is, students are not confused and can remember feedback; sufficient information is provided to help them correct complicated errors such as idiomatic and syntactic errors; and direct CF is more preferable as immediate feedback on errors they made. Shintani and Ellis (2013) revealed that students given direct CF with metalinguistic explanations can improve their explicit knowledge of English indefinite articles more successfully than receiving direct CF alone. Similarly, Bitchener et al. (2005) found that learners receiving direct CF with metalinguistic explanations performed better in reducing errors than those obtaining direct CF only. Thus, the participants in this study received direct CF with metalinguistic explanations to enhance the effectiveness of direct CF.

E-feedback is the teacher's indirect feedback which is sent through Internet-based communication platforms by means of a hyperlink to a concordance file providing students illustrative correct usage of errors (Ellis, 2009a). Therefore, the concept of e-feedback denotes computer-facilitated feedback delivered in synchronous or asynchronous computer mediated feedback (CMC). The synchronous e-feedback is immediate feedback while the asynchronous e-feedback is delayed feedback which takes place after students have completed their computer-mediated writing tasks. The asynchronous e-feedback includes both online and offline text editors together with review features, for instance comments/track changes in Microsoft Word, Google Docs, email, discussion board messages, blogs, and course management systems. Google Docs has increased in popularity in language classrooms because it is a free and fully-fledged online word processor with an easy-to-use text editing interface (Chapelle & Sauro, 2017). Asynchronous e-feedback is superior to synchronous e-feedback because students have time to correct their errors and can produce more accurate texts in both the revised text and a new piece of writing (Ferris, 2006; Shintani & Ellis, 2013; Shintani et al., 2014). Also, as a result of the delayed nature of asynchronous discussions, students receive more opportunities to produce syntactically complex language (Sotillo, 2000).

E-feedback has advantages in promoting students' autonomous learning and self-problem solving skills when technology is applied more in language classrooms (Suwantarathip & Wichadee, 2014; Ware & Warschauer, 2006). This is network-based language teaching in which agency is shifted to students (Warschauer & Kern, 2000) providing opportunities to notice writing problems and correct them on their own rather than depending on teachers. Students, moreover, can access abundant authentic resources since e-feedback offers them global hyperlinks to online documents for self-study. However, technology is a double-edged sword because students tend to practice plagiarism and have difficulties in managing search results (Geiller, 2014). Therefore, teachers should mentor students on how to use technology and cope with overwhelming search outcomes (Changwong et al., 2018).

The role of written CF can be explained by the Noticing Principle (Schmidt, 1990) in which only noticed input can become intake and work through an effective processing of L2 acquisition. Schmidt (2001) stressed the importance of conscious awareness in input processing and asserted

that "people learn about the things they attend to and do not learn much from the things they do not attend to" (p. 30). Therefore, not paying attention to the rules of the target language is one of the reasons causing errors except for not knowing and forgetting the rules, so consciousness (awareness) helps draw learners' attention and is an important step before materials are introduced to them in a developing interlanguage system.

The role of CF can be considered as being based on the sociocultural theory (Vygotsky, 1978) since learning activities include social interaction. Language development emerges when learners have suitable scaffolding, receive guided support of other regulation offered by teachers, then becoming self-regulated learners with the capability of using the L2 autonomously in their zone of proximal development (ZPD) (the zone in which their knowledge is improved due to the more competent partners' scaffolded assistance) (Bitchener & Ferris, 2012).

This study presents that individual differences (IDs) play an important role in participants' error correction, for instance carelessness, insufficient English knowledge, the first language, learning styles, and learning strategies. Carelessness is a personality factor which is an uncontrollable factor in the intrinsic side of the affective domain of second-language acquisition (Brown, 1994). The affective factor refers to anxiety, including trait anxiety (an innate personality trait of learners to feel anxious), state anxiety (momentary experience of anxiety in a certain situation), and situation-specific anxiety (anxiety aroused by a particular situation, e.g., class attendance, examination, and public speaking) (Ellis, 1994).

Insufficient English knowledge indicates a lack of language aptitude, involving phonemic coding ability (ability to spell and handle foreign sounds), grammatical sensitivity (ability to diagnose grammatical functions of words in sentences), inductive language learning ability (ability to recognize correspondence and relationships including both form and meaning), and rote learning ability (ability to form and to remember associations between stimuli, especially vocabulary learning) (Carrol, 1965).

Learning style refers to the preferred methods individuals use for problem-solving. Four learning styles, according to Willing (1987), include concrete learning style (risk-takers who dislike routine learning but prefer to be physically involved in learning), analytical learning style (independent learners who prefer to solve their problems by themselves),

communicative learning style (learners who enjoy social interaction such as group discussion), and authority-oriented learning style (dependable learners who prefer clear instruction).

Native language engenders the use of learning strategies in which the learning strategy of translation is "using the first language as a base for understanding and/or producing the second language" (O'Malley et al., 1985, p. 583).

2. Methodology

2.1 Pilot study

A pilot study was conducted at a university in Chiang Mai, Thailand with six participants who shared the same characteristics as participants in the main study. It was found that the use of only one writing exercise (reason paragraph writing) was insufficient for participants to improve. Therefore, in the main study, two more writing assignments were added (narrative and descriptive paragraphs) to expose participants to various texts.

2.2 Participants and setting

This study was conducted in a classroom setting to enhance the ecological validity of the findings as they were interpreted in a natural context (Duff, 2008). Six typical cases (the third-year English-major students at a university in Pathum Thani, Thailand) volunteered to participate in this writing course. They had taken the Test of English for International Communication (TOEIC) in the last quarter of 2019 with results placing four students in the B1 category and two students in A2. They were native Thai speakers in their early 20s who self-selected which group they preferred (1: direct CF and 2: indirect asynchronous e-feedback) because a qualitative study should be by nature free from controls of selection bias—random sampling (Patton, 2002). Finally, three students per group received two different CF types (Table 1).

Data sources such as participant observations, interviews, and writing samples were analyzed to describe the characteristics of each. Four semi-structured interviews were conducted (one for demographic data and three for how they corrected their errors done after the revision

session of each writing assignment). They were interviewed individually with detailed questions. With multiple data sources collected over a four-month period, the researcher was relatively acquainted with each and their characteristics can be described as follows using pseudonymous names:

2.2.1 Sunny

Sunny was a careful and skillful student in which grammatical mistakes were rarely produced in her written texts. She had a logical writing style and presented interesting ideas. This might be because she used to be a school representative for English competitions at high school. Also, she was a perceptive student giving the researcher useful information for data analysis.

2.2.2 Victor

Victor was a skillful student with an extensive English vocabulary and was confident in his writing skills. However, he demonstrated some vague ideas and made unusual word choices leading the researcher to misunderstand him at times. Sunny and Victor were both good at self-studying and intelligent, but Sunny was more prudent and reasoned.

2.2.3 Sam

Sam was of average ability. He used plain English and produced a short paragraph with uninteresting ideas. However, he was enthusiastic about learning from the mistakes in his writing. He sometimes neglected to adopt teacher's feedback but preferred his own ideas.

2.2.4 Pat

Pat was a careless student. She hurried to complete her writing until the researcher urged her to take her time to read the teacher feedback and edit errors. She produced a very short paragraph because of a lack of writing ideas and vocabulary knowledge.

2.2.5 Anna

Anna was a careless student. She was a quick writer which was similar to Pat and often made misspellings. Sometimes, she could not remember the types of errors or the coding scheme of the errors. Compared to Sabrina who had the same level of English proficiency, Anna produced fewer grammatical and lexical errors.

2.2.6 Sabrina

Compared to the others, Sabrina was the weakest student who made more errors and was least successful in error correction. She was not able to read English until Grade 12. She went to a tutorial school, but was not taught to read English, so she tried to improve her English reading skills from websites. She practiced English listening together with reading daily until her reading improved. She preferred the teacher to explain everything and she studied grammar.

Table 1

Students' Profiles

Student Names (pseudonyms)	Gender	Age	English Proficiency Level	Groups
Anna	Female	21	A2	
Sunny	Female	20	B1	1: direct CF
Sam	Male	20	B1	
Sabrina	Female	21	A2	2: indirect asynchronous e-feedback
Pat	Female	21	B1	
Victor	Male	21	B1	

2.3 Data collection

Data were collected from multiple sources: participants' written texts, interviews, and observations to meet construct validity. Six typical cases were divided into two groups receiving two different types of CF (Group 1: direct CF and Group 2: indirect asynchronous e-feedback). During weeks 1-5, the first interview to collect demographic data was conducted, and they were taught text features of paragraph writing.

Knowledge concerning the composition of a narrative paragraph was provided to both groups of participants.

In week 6, the participants in Group 1 began writing papers while those in Group 2 were trained how to use Google Docs software before starting their online writing. All of them were required to submit their initial drafts in the classroom.

In week 7, they received their texts with teacher CF (Appendix C) and corrected errors based on feedback provided. In this week, the teacher as the researcher interviewed them individually to discern how they corrected their errors. The interview protocols were adapted from Ferris et al. (2013), Plakans (2009), and Zareekbatani (2015).

Similarly, in weeks 8-11, they wrote descriptive and reason paragraphs, submitted their initial texts, corrected errors vis-à-vis the teacher CF they received, and were interviewed.

The focus group interview was completed in the last week to improve the internal validity in which participants were asked to check the accuracy of their error types and revision scores (Creswell & Creswell, 2018; Duff, 2008). There was no instruction during the participants' text revision process.

Observational data included the researcher's written journals. The researcher used field notes to maintain a record of problems found during data collection and any other issues.

2.4 Data analysis

To answer RQ1, errors were categorized using a coding scheme of learners' errors (Appendix A). Then, the number of errors found in participants' initial drafts of each writing task was counted based on the criteria for error count adapted from Hemchua and Schmitt (2006). Next, simple descriptive statistics were used to calculate the frequency of errors and the percentage of each error. Finally, the rating scale for revision adapted from Ferris (1997) (Appendix B) was employed to grade revisions. Revision scores were calculated by multiplying the number of errors by the rating scale for revision (0: no change, 1: change with negative effect, 2: change with mixed effect, and 3: change with positive effect). Revision scores were then calculated into a percentage (total revision scores*100/total errors*3). Intercoder reliability can help address reliability in qualitative studies (Creswell & Creswell, 2018). Two raters (the researcher and the other inter-rater) analyzed data independently, and

the coefficient of the inter-rate reliability for the pilot and main studies (Table 2) was in the range of .90-.80 (Graham et al., 2012).

To identify factors influencing their ability to benefit from teacher feedback (RQ2), semi-structured interviews focusing on errors that participants failed to correct were analyzed using thematic analysis. The regularity of the participation in the research project, time pressure, and students' busy schedules were also examined to determine external factors resulting in their incompetence in using teacher feedback.

Table 2

Inter-Rater Reliability

Phases	Assignments	Inter-Rater Reliability
Pilot Study	Reason paragraph writing	Error Types: .902 Revision Scores: .822
Main Study	Narrative paragraph writing	Error Types: .844 Revision Scores: .821
	Descriptive paragraph writing	Error Types: .932 Revision Scores: .851
	Reason paragraph writing	Error Types: .809 Revision Scores: .855

3. Findings and Discussion

Concerning RQ1, Table 3 shows that all participants made all types of errors, except for arbitrary combination errors. Among those 119 errors, the statistically weighted preference errors were most common (52), followed by semantic word selection errors (47), and calque errors (20). Sunny, Sam, and Anna (Group 1) outperformed Victor, Pat, and Sabrina (Group 2) in correcting statistically weighted preference and semantic word selection errors as seen from the higher positive revision scores (88%/77% and 85%/55%). However, Group 2 seemed to correct calque errors more successfully than Group 1 because all errors made by Victor, Pat, and Sabrina were revised positively (a 100% positive revision score). Anna was the only participant in Group 1 whose calque error was corrected with mixed effect whereas Sunny and Sam were able to correct all calque errors.

Three cases were selected to illustrate how participants corrected errors. Example 1 showed that Anna's attempt to respond to feedback resulted in positive revision. She understood feedback and revised her errors correctly. In Example 2, Sunny had a mixed effect in her revision in which she responded to feedback on using "rumble" but misunderstood that it was an adjective. Sabrina struggled in applying indirect asynchronous e-feedback to her revision, which was changed with negative effect (Example 3). According to her interview, she responded to feedback by studying the links provided. She understood the error code, but her correction was still inaccurate because "personal preference" was more appropriate to describe her favorite, rather than personality.

Example 1
Anna's semantic word selection error: *"make discipline"*
Teacher's direct CF with metalinguistic explanations: *"the verbs used with 'discipline' include 'keep', 'maintain', and 'enforce'. Select one you like because all three mean making people obey the rules."*
Anna's revision: *"keep discipline"*
Revision rating is 3 (change with positive effect).

Example 2
Sunny's semantic word selection error: *"my stomach felt like an empty room"*
Teacher's direct CF with metalinguistic explanations: *"it's quite strange if you write 'my stomach felt like an empty room'. Your stomach is making a noise because you are hungry. The correct answer is 'rumble'."*
Sunny's revision: *"my stomach was rumble"*
Revision rating is 2 (change with mixed effect).

Example 3
Sabrina's statistically weighted preference error: *"pink color is my unique mood"*
Teacher's indirect e-feedback with metalinguistic explanations: *"'mood' is emotion explaining how you feel at a particular time. For example, I was in no mood for a joke. Search for a better word from these links: 'https://www.ldoceonline.com/dictionary/color,' 'https://dictionary. cambridge.org/ dictionary/english/mood', and 'https://dict.longdo.com/."*
Sabrina's revision: *"pink color is my personality"*

Revision rating is 1 (change with negative effect).

Table 3

Number of Errors and Scores for Revision

Error Types	Scales for Revision	Direct CF			Indirect Asynchronous e-Feedback		
		Sunny	Sam	Anna	Victor	Pat	Sabrina
Statistically Weighted Preference	No change	-	-	-	-	-	-
	Negative effect	-	-	3	3	2	1
	Mixed effect	-	-	-	-	-	-
	Positive effect	10	8	5	9	11	-
		10	8	8	12	13	1
Total		26 errors Positive = 23 (88%) Mixed + Negative = 3 (12%)			26 errors Positive = 20 (77%) Mixed + Negative = 6 (23%)		
Semantic Word Selection	No change	-	-	-	-	-	-
	Negative effect	1	1	-	-	2	6
	Mixed effect	2	-	-	1	-	-
	Positive effect	11	6	6	-	1	10
		14	7	6	1	3	16
Total		27 errors Positive = 23 (85%) Mixed + Negative = 4 (15%)			20 errors Positive = 11 (55%) Mixed + Negative = 9 (45%)		
Calque	No change	-	-	-	-	-	-
	Negative effect	-	-	-	-	-	-
	Mixed effect	-	-	1	-	-	-
	Positive effect	8	3	2	1	3	2

Error Types	Scales for Revision	Direct CF			Indirect Asynchronous e-Feedback		
		Sunny	Sam	Anna	Victor	Pat	Sabrina
Total		8	3	3	1	3	2
		14 errors Positive = 13 (93%) Mixed + Negative = 1 (7%)			6 errors Positive = 6 (100%)		
Arbitrary Combination		-	-	-	-	-	-

The findings revealed that the participants in Group 2 receiving indirect asynchronous e-feedback outperformed those in Group 1 obtaining direct CF in correcting calque errors. However, it is unreasonable to assume that indirect asynchronous e-feedback was more effective than direct CF. This is because the reason Anna failed to correct one calque error (Table 3) was due to the lack of grammatical sensitivity which is language aptitude in learner differences (Carrol, 1965). The underlined error *"my friend and I went to the airport before checked in two hours"* should have been changed to *"...to have our luggage checked in two hours before boarding"* or *"...two hours before checking in"*. Anna declined to apply feedback to her revision because she preferred her own thought *"My friend and I went to the airport in order to have checked in 2 hours before,"* stating that teacher feedback was too lengthy, so she changed to what she understood. Her correction was considered a change with a mixed effect because she attempted to respond to the feedback. However, the perfect infinitive is used after verbs (e.g., claim, expect, hate, hope, and pretend), referring to situations that might have happened in the past or will be completed at a point in the future. Therefore, it is reasonable to assume that not only types of CF but also individual learner differences influenced learning outcomes (Chen et al., 2016; Riazantseva, 2012; Tsutsui et al., 2008).

To correct collocation errors (statistically weighted preference and semantic word selection), Group 1 outperformed Group 2. This is because when handling collocation errors, which are untreatable errors (word choice and idioms) and very hard to explain (Ferris, 2011), direct CF will be more effective than indirect feedback (Ferris, 2006; Kisnanto, 2016). Theoretically, direct CF with metalinguistic commentary not only makes

input noticed but also increases conscious awareness drawing participants' attention to the target language (Schmidt, 1990; Sheen, 2007). Consequently, participants receiving direct CF revise such errors more successfully than those having indirect asynchronous e-feedback. In addition, direct CF in writing causes a shift in participants' language development to the ZPD, where they finally can be self-regulated after receiving assistance from the more knowledgeable person, more than indirect asynchronous e-feedback can.

The other subtype of collocation errors (arbitrary combination) was not created by all participants. Rather than using *"try"* in a more complicated form such as *"have a try"*, they used *"try"* as a verb which sounded simpler, for example, *"I/we tried to..."*. *"Make"* was used as a causative verb which has the same structure as in the Thai language such as *"make me think of"* and *"make me feel impressed"*. This finding indicates that participants' L1 collocation knowledge affected their use of collocations (Phoocharoensil, 2011; Yamashita & Jiang, 2010).

Concerning RQ2, interviews were conducted to determine the reasons they were unable to successfully revise their errors after receiving feedback. Participant observations were also included to cross-check the factors affecting their ability to make use of the teacher's feedback. It was found that both individual and contextual factors influenced participants' incompetence in correcting their errors. Individual factors consisted of (1) carelessness, (2) poor screen-based reading comprehension, (3) poor background knowledge of English, (4) laziness, (5) authority-oriented learning style, and (6) poor native language skills. Time pressure was the only contextual factor which impacted participants' ability to benefit from feedback. Four cases (Anna, Victor, Sabrina, and Sunny) were selected to discuss this as they clearly represented how those factors influenced their inability to revise errors.

Anna showed her carelessness, misspelling *"admission frees <fees>"*. In fact, the participants receiving direct CF should not produce mixed or negative revisions because the teacher's direct answers were provided. During the interview, she accepted that she was unable to correct this error because of her carelessness. This may be explained by individual learner differences (Ellis, 1994) and that carelessness results from trait anxiety (Ellis, 2015), which is an uncontrollable personality factor, rather than students' incompetence. Errors caused by carelessness or inattention were reported to be learners' reaction to the teacher's

written CF (Zarifi, 2017). Students valued teacher feedback and they felt embarrassed when errors resulted from their carelessness (Zhang & Hyland, 2018).

Victor had poor reading comprehension when dealing with screen-based reading. He was unable to correct the error *"friends who are always by my side <best friends/closest friends>,"* remarking that the link the teacher offered did not help him find the right answer. In fact, the online Cambridge dictionary clearly showed sentence examples of types of friends, for example, best, oldest, closest, good, or family friends. Victor had difficulty in revising his error *"friends who are always by my side <best friends/closest friends>"* when receiving indirect asynchronous e-feedback. This indicates that reading in the digital era requires different activities (browsing, keyword searching, skimming, backtracking, and skipping) in which learners concentrate less on reading (Liu, 2005). Reading comprehension of students using screen-based reading was lower than in paper-based reading because they tend to lose attention easily due to links and options in interactive texts (Cull, 2011; Lems et al., 2017). Learners should be taught metacognitive strategies to read efficiently in each text structure such as handwritten, linear, screen-based, and interactive texts (Kang, 2014). Reading comprehension strategies in L2 cannot occur autonomously but need to be explicitly taught (Lems et al., 2017). Therefore, teachers should consider learners' online reading comprehension proficiency when adopting online writing with e-feedback. The new role of teachers is to assist students in selecting, employing, and applying sources for problem solving, into which indirect asynchronous e-feedback seems to fit.

Sabrina had poor background knowledge of English because the underlined error *"you are a yourselves-confidence public speaker"* was incorrectly revised to *"your self-confidence"*. She revealed that "While I was editing this error, I thought that the word 'you' was a subject of this sentence, so I had to change from 'yourselves-confidence' to 'your self-confidence'." This case illustrated that poor knowledge of English grammar causes a failure to benefit from feedback. She lacked grammatical sensitivity or language aptitude in diagnosing the grammatical functions of words (or other linguistic entities) in sentences (Carrol, 1965; Ellis, 1994).

Sabrina produced most errors compared to other participants. Except for not knowing the adjective form of self-confidence, she was unable to correct the error *"... when I arrived at my lift on the main street*

<top of the side road>". She revealed in her interview that she thought of a Thai correct word *"ปากซอย"* (top of the side road) but selected to remove *"lift"* rather than searching for the English word for *"ปากซอย"*. This evidently illustrated that she was not diligent in seeking relevant information. Simply put, she was lazy to solve a problem, and neglected to discover the accurate answer. This assumption is affirmed by Puengpipattrakul (2013) that laziness resulted in a repetition of writing errors. Another perspective is that Sabrina possessed the authority-oriented learning style in individual learner differences (Ellis, 1994). That is, "the learners prefer the teacher to explain everything, have their own textbook, write everything in a notebook, study grammar, learn by reading, and learn new words by seeing them" (Wong & Nunan, 2011, p. 145). This is supported in her interview when she stated that "if I made errors on parts of speech, I would like you to deeply explain root words. This would help me know how to correct errors." Therefore, e-feedback may not be suitable for low proficiency students such as Sabrina, who favored direct CF rather than indirect e-feedback, causing her confusion regarding what the teacher needed to convey.

Moreover, Sabrina presented poor knowledge of the first language, still making the same mistake *"pink color is my _personality_"* *<personal preference>.* She stated that "while editing, I thought of a Thai word first and found a synonym in English for 'เอกลักษณ์'. I thought of 'personality' and started revising." Typically, EFL students used the learning strategy of translation which helped increase their confidence and relaxation during the language learning process (Karimian & Talebinejad, 2013). Translation is described as one of the learning strategies in which students use the first language as support for understanding the second language. Therefore, students' poor knowledge of native language has affected the way they improve their target language knowledge. Sabrina clearly represented a case where poor native language knowledge has decreased her ability to benefit from feedback.

The last and only external factor, time pressure, impacted participants' ability to benefit from feedback. They were required to read all teacher's feedback and complete their revisions within three hours. Sunny reported that because of the time limit, she was in a hurry to revise all errors and she lacked time to check what she revised again. Not surprisingly, L2 learners normally produce interlanguage, usually containing mistakes and errors. Learners' beliefs, native language, time,

and carelessness played a central role in preventing them from correcting errors (Han, 2019; Zarifi, 2017; Zhang & Hyland, 2018). Therefore, time pressure affected how effectively students utilize written CF.

4. Conclusion

Both indirect asynchronous e-feedback and direct CF are effective in treating errors, according to the high percentage of revision scores of both groups. However, for EFL learners, direct CF tends to be more effective in the sense that it increases input highlighting which raises the consciousness of participants until they understand the feedback. There is no hesitation about the roles of direct feedback as the noticed input. Therefore, when dealing with indirect asynchronous e-feedback, it may be more effective if the teacher provides additional types of feedback because some errors are less appropriate for correction by indirect feedback such as collocation errors.

This study suggests that not only the nature of the feedback, but also individual differences are major factors resulting in the participants' ability to benefit from feedback. Teacher feedback (with metalinguistic explanations) was provided in a very clear manner; however, some participants did not follow the feedback but decided to use their own thoughts for revisions which were found to be negative, mixed, and positive changes. There is little doubt that errors revised with negative and mixed effects were due to some students' carelessness, poor background knowledge of English, as well as the use of authority-oriented learning style and translation learning strategy. Given students' positive revisions when teacher feedback was declined, a major role of teacher feedback is to urge caution in students' revisions. In other words, a feature of teacher feedback is that it indicates what errors and where to correct them. Teacher feedback alone cannot be fully responsible for the participants' ability to make corrections. Several factors must be considered, primarily individual differences. This is particularly important if stable positive results are to be expected.

Some students reported their lack of preparedness to apply e-feedback successfully to their revisions because screen-based reading required different activities (browsing, keyword searching, skimming, backtracking, and skipping), compared to paper-based reading. Offering students e-feedback is not simple and integrating technologies into

language learning should not be for the purpose of being trendy. Not only did a student need to learn those skills, but the writing teacher needed to master the computer-mediated communication literacy skills by selecting appropriate online channels which suited and were beneficial to receivers. Students are supposed to know how to utilize digital technology when adopting e-feedback in a writing classroom. Thus, learner development should be concomitant with the requirement of the use of advanced technology. In so doing, students will derive considerable benefits from using technology.

Last and perhaps most interestingly, the use of editing strategies for written CF is related to students' goals, beliefs, previous experience with feedback, and developmental levels. Teachers cannot expect them to understand and correct the errors appropriately based on the teacher's feedback alone. L2 writing studies should move attention away from writing accuracy because it is impractical for A2 students to become C1 students in one semester. Teachers should facilitate students to have motivation to continue writing English by themselves vis-à-vis the concept of other- and self-regulation in the ZPD. When the teacher's positive intention and encouragement are perceived by students, feedback will empower a motivating function and help develop self-editing skills in an elaborated writing process.

5. Limitations

Since lexis is intricate, clear-cut categorization is not always possible. Thus, lexical error categories may overlap. The researcher did not neglect this problem but put effort into finding more papers which described the different characteristics between Thai and English to understand that calques can be considered in terms of grammar and lexis. Then, the researcher listed specific definitions of calques as shown in Appendix I and provided a comprehensive categorization framework for a more precise discussion of the error types.

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Appendix A

Coding Scheme of Learners' Errors

Error Code Category	Definitions	Examples
1. Calques (Calq)	• Literal translation • A translation of a word or a phrase from the first language • Direct translation from the first language to the second language, such as: - not using the helping verb "be" with adjectives,	Students' sentences: - *We have to find a bus to <u>bring us go to</u> the hotel.* (bring us to) - *<u>At the in front of Big C</u> while I was driving, I tried, I tried to drive carefully.* (In front of Big C) - *my <u>two hand</u> clothes* (second hand)

| Error Code Category	Definitions	Examples
	- not having a subject of a sentence, - having a serial verb construction, and - being a S-V-O structure written from left to right and placing modifiers after words they modify.	- *My table study is blue and big.* (desk). - *He clever. (is clever).* - *So, is cause why I think the Internet has made our lives better (this is a cause).* - *... such as ... make an account to collect your money for selling many products continue. (recording accounts of sales figures to see how products could be sold continuously)*
Collocation		
1. Semantic Word Selection (SemSel)	- The semantically wrong selection of words	Students' sentences: - *Last year was my crooked year (difficult year).* - *The city is grown (developed).*
2. Statistically Weighted Preferences (WPref)	- The lexical errors caused by using less preferable words in a context - A word used is not wrong such as the error of semantic word selection, but there is a better word tailored to the situation.	Students' sentences: - *An army has suffered big losses (heavy losses).*
3. Arbitrary Combinations (ArCom)	- Lexical errors originating when a word has the same meaning as another word but does not share the same word use together - Irreversible binomials	**Students' sentences:** - *They have an attempt to escape (make an attempt).* - *I decide to make a last try (have a last try).* - *We bought chips and fish for our dinner (fish and chips).* - *Cream and strawberries is a traditional English dessert (strawberries and cream).*

Appendix B

Rating Scale for Revision

Scale	Description
0	No change: No discernible change made by student in response to this feedback.
1	Change/effect negative: Attempt by student in response to the feedback, effect generally negative or negligible.
2	Change/effect mixed: Attempt by student in response to feedback, effect mixed. Minimal attempt by student to address the coded CF, effect mixed
3	Change/effect positive: Attempt by student in response to feedback, effect generally positive.

APPENDIX C

Teacher's Indirect Asynchronous E-feedback
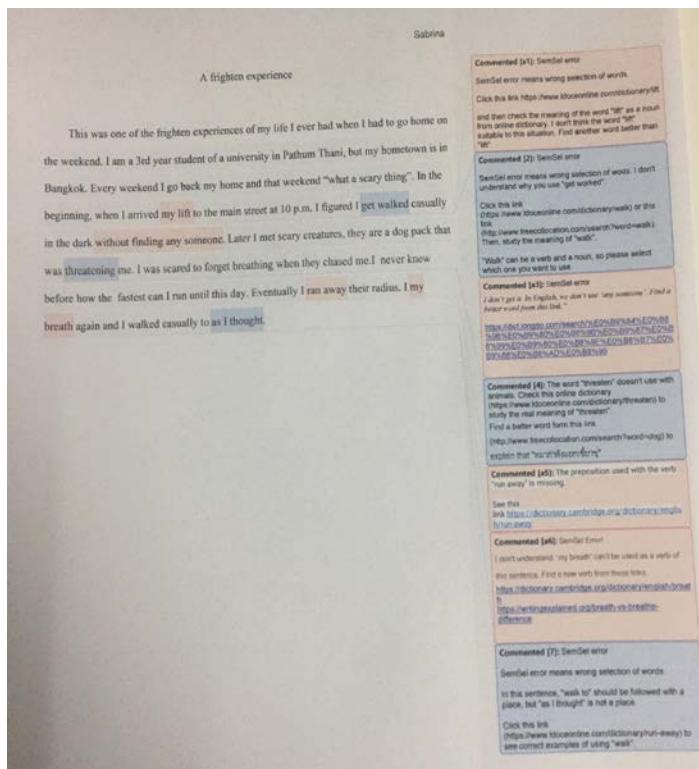
Sunny

Assignment 1   Memorable vacation

Visiting Saikaew Beach was one of my unforgetable memories. I had ① Calq. planned with my family for months to go there. On the 20th April 2019, I was very excited, so I got up earliest before my parents and then I ran quickly to the light switch and turned it on. Then, everybody was ready after preparing ourselves for 40 minutes, and we spent one hour for driving to the beach. Next, my feet touched sands on the beach after we arriving. The moment like that was the best feeling ever because I could hear the sound of the ② WPref sea wave and smell the fresh air of the beach. My little sister, brother and I quickly ran to the changing rooms. Then, we put on swimming suits and ran directly to the beach. ③ SemSel The first feeling when my body touched the ④ WPref water, was not wonderful but ③ SemSel salty because I opened my mouth too wide and forgot to close it. My mouth was full of sea salt, but this feeling did not make me sad because after playing in the sea for 30 minutes I realized that Saikaew Beach has the most beautiful scenery. If you were me, you would feel the ⑤ Calq same way because not only the ⑥ WPref clean water but the sand itself was also purely white like ⑦ SemSel a heaven. The biggest problem that annoyed me the most were the weather because it was a sunny day, and water in the restroom was ⑧ SemSel dropping like a serum. I was showering for 30 minutes, and it took me too long. After ⑨ Calq opened the door, my ⑩ SemSel stomach felt like an empty room, then my mother shouted from the ⑪ SemSel restaurant that she prepared food for me. I kept my pace quicker and sat down and ate delicious seafood. The last thing I knew before I finished this trip, I looked at the beach and talked to myself that this trip will be in memory for a very long long time.

① Calq. means Thai translation. In English, we don't say/use "plan with" but "plan to do something," so it will be better if you rewrite this sentence as "I and my family had planned to visit Saikaew Beach for months".

② WPref means there is a better word fit into this situation. The word "wave" represents waves in the sea, so you have no need to write "sea wave".

③. SemSel means wrong selection of words. The first feeling used as a subject of this sentence can't be salty. Think twice! The subject "feeling" and the adjective "salty" don't go together, so I recommend using "disappointing" instead.

④ WPref means there is a better word fit into this situation. The meaning of water is the clear liquid without color, smell, or taste that is used for drinking and washing. In this situation, you mean water in the sea, so it shouldn't be water but seawater.

⑤ Calg. means Thai translation. In this situation, you want to write "รู้สึกเหมือนกัน / รู้สึกไปโดยรอบด้วยกัน", but in English we ~~use~~ use the verb "feel" with "way" in case that you move carefully with your hands out in front of you, because you can't see properly. However, when you want to convey your meaning of "รู้สึกไปโดยรอบด้วยกัน / รู้สึกเหมือนกัน", you should write "feel the same". Use "the same" as an adverb in this sentence.

⑥ WPref means there is a better word fit into this situation. Are you sure seawater is clear. Clean water means clean drinking water. It will be better if you use "clear" or "crystal-clear" water.

⑦ SemSel means wrong selection of words. We don't say "white like a heaven". The word "heaven" represents place of God or enjoyable situation. The word heaven is used in an English sentence such as in heaven or heaven on earth. It will be correct if you use another word like "powdered sugar".

⑧ SemSel means wrong selection of words. The verbs used with the noun "water" include flow, pour, run, gush, spurt, drip, trickle, and so on. If you want to write "หยดน้ำ", it should be water is dripping (not dropping). The word "drop" isn't used with water.

⑨ Calg means Thai translation. This sentence doesn't have a subject.