The Role of Writing in EFL Students' Learning from Texts: A Case Study in a Thai University

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Abstract

This article reports research findings from the study which explored how writing may foster EFL (English as a Foreign Language) students' learning of content and language from English texts. The focus of this article is on language learning through writing associated with reading. The first phase of the study involved naturalistic observations over 4 months of 1 Thai EFL instructor and 15 female undergraduate students in a reading class at a major university in Thailand, interviews with the instructor and her students, then examination of samples of class materials and students' writing. In addition, for one month the students kept written logs of their uses of writing in connection with reading. In the second phase of the research, the students performed reading and writing tasks while thinking aloud, then I interviewed them about their uses of writing in their reading.

Analyses of the oral and written data indicate that their writing contributed to the students' text-based learning through combinations of: (a) writing allowing students to notice gaps in their knowledge; (b) writing prompting students to assume the role of writers; (c) writing involving careful thinking; (d) writing urging students to review, rethink, think further about, and use information in the source texts and, sometimes, study related texts; and (e) whatever was written down being available for review, reflection, and revision. Writing before and after reading as well as self-initiated writing while reading showed the potential to enhance students' learning from texts by drawing their attention to text language forms and other related forms, so they could use them strategically and familiarizing students with text characteristics. The descriptions in this article may help guide EFL policy makers, curriculum designers, material developers, and instructors to make informed decisions about the benefits for students' learning from their incorporating certain types of writing into EFL reading lessons.

Rationale for the Study

Numerous studies (e.g., Langer & Applebee, 1987; Marshall, 1987; Newell, 1984; Penrose, 1986) have investigated the effects of writing on students' learning from written texts in their first language (L1). Taken together, these studies of "writing-to-learn" suggest that writing can play an important role in the learning of new knowledge (a) by making a person aware of what is known, what is unknown, and what needs to be known; and (b) by serving as a powerful tool for rethinking, revising, and reformulating what one knows.

In studies of second-language (L2) learning, the input hypothesis claims that learners acquire a language when they have opportunities to understand natural language as comprehensible input by relying on extralinguistic context and their previous knowledge (Krashen, 1982). Therefore, interesting written texts at an appropriate level of difficulty should serve as a rich source of comprehensible input for learners. In other words, the more learners read, the more they are exposed to and incidentally learn aspects of the language the materials offer (See Elley, 1991 for comprehensive documentation of the success of comprehension-based programs). However, a number of studies (e.g., Harley, 1992; Harley, Allen, Cummins, & Swain, 1990; Harley & Swain, 1978, 1984) conducted in French immersion programs in Canada suggest that exposure to the target language alone may not be sufficient since learners are likely to fail to achieve a high level of performance in some aspects of French even after several years of full-day exposure to the target language. This may be because these students were not pushed to be more precise or more accurate in their language use. Swain's (1995) output hypothesis suggests that learners' attempt to produce the target language may give rise to occasions in which learners face linguistic problems,

prompting them to (a) notice gaps in their linguistic knowledge and the need to close those gaps, (b) form and test their hypotheses about linguistic forms, and (c) use language as a means to reflect on their own language use. And these may be crucial steps toward language learning.

These concepts of writing to learn, the input hypothesis and the output hypothesis suggest that students' uses of reading and writing together may have a better potential for creating conditions integral to their learning than either reading or writing would alone. Writing about texts that one reads may guide learners to reflect on and negotiate content and language not only in the texts that they themselves have created through writing but also in the texts that they read.

In fact, ESL (English as a Second Language) writing textbooks have for decades been using readings as source material for student writing, as stimuli for ideas, and as model texts to be analyzed by classes (Raimes, 1986; Reid, 1993). Likewise, ESL reading textbooks usually ask students to write short answers to check their comprehension. Most academics seem to view integrative uses of reading and writing as mutually supportive for literacy development and content learning (Carson, 1990; Ferris & Hedgcock, 1998). However, to my knowledge, there is no study that describes, from a pedagogical viewpoint, exactly how writing contributes to learning from L2 texts. ESL/EFL[1] reading instruction and research tend to focus on strategies that aid students' comprehension of specific elements of text (Kasper, 1996; Zamel, 1992) such as identifying main ideas or inferring meanings of unfamiliar words from context clues which do not require students to respond to text after initially comprehending the text to build up a higher level of comprehension, or to elaborate on the content of texts – essential skills in the age of information technology (Goldman, 1997). Moreover, the teaching of reading, at least in many EFL contexts, tends to discount students' personal histories, and reading is often reduced to the act of finding a specific idea, as if this idea resides fixed in the text. This type of learning experience may lead to students' misconceptions that (a) in order to read one must understand and memorize all that has been read; (b) they should be concerned with definitive meaning; (c) the difficulties, ambiguities, and confusions they are trying to overcome are necessarily a sign of a problem that resides in them; (d) because what makes sense to them did not match with the answers expected, they cannot read well; and (e) what they can identify with is not important since it is often the very connections that make the text come alive and stay with them that are not acknowledged (Zamel, 1992).

In my view, one of the reasons that various types of writing about texts have not been widely adopted in the ESL/EFL reading classes is because instructors do not know what trade-offs would be required in their own instructional goals, or what benefits might ensue in terms of students' learning if they are to engage in writing tasks. I can definitely identify with Kasper (1996) who complained that, "I wanted to use writing to its best advantage with my ESL students, and I could find no data which would help me determine if one type of writing activity was better than another" (p. 27). In light of the current problem, I designed the present study to contribute to improving EFL reading instruction by exploring the role of writing in EFL students' learning from texts. As an EFL practitioner in Thailand, I think studies of this nature are relevant to language educational policies in the Thai context and respond to the needs of the majority of Thai learners of English. Kachru (1985) points out that the uses of English around the world appear in three contexts: the regions where English is the primary language (e.g., USA, UK); the regions that have gone through extended

[1] According to Richards, Platt and Platt (1992) English as a Second Language (ESL) refers to (a) "the role of English for immigrant and other minority groups in English-speaking countries. These people may use their mother tongue at home or among friends, but use English at school and at work" and (b) "the role of English in countries where it is widely used within the country (e.g., as a language of business and government) but is not the first language of the population" (p. 124). English as a Foreign Language (EFL) was defined as "the role of English in countries where it is taught as a subject in schools but not used as a medium of instruction in education nor as a language of communication (e.g., in government, business, or industry) within the country" (pp. 123-124).

periods of colonization where English has an important status in language policies (e.g., Hong Kong, Singapore, India); and the regions where the use of English was initiated by non-native speakers from the need for modernization and technology (e.g, China, Korea, Taiwan, Thailand). It follows that learners of English in each group have different degrees of exposure to the language and different needs for language skills. In the case of Thailand, the country has one official language, Central Thai, which is used for most communication purposes. English is recognized as a language of modern technology and higher education. Compared to learners in other English-dominant contexts, Thais in general have few chances to interact with English native speakers. And the need for English reading skills is greater than other language skills (Wongsothorn, Sukumolson, Chinthammit, Noparumpa, & Rattanotayanonth, 1996). Therefore, a focus on the development of literacy skills in English among Thai learners is central to language pedagogy. As Bernhardt (1991) has suggested, not only are written texts highly accessible, they also offer the most practical and inexpensive source of contact with a second language.

Purposes of the Study

This study had two phases: **The observational phase** and **the task analysis phase.** Hoping that the study will have some direct impact on educational practice, in **the observational phase**, I took into account the social context of an English reading class in an EFL setting. The purpose of this phase was to examine the ways in which writing was used in the reading class at a major university in Thailand and to document the instructor's as well as students' perceptions of (a) the uses of writing in the reading class and (b) the contributions of writing to their learning of English texts. The purpose of **the task-analysis phase** was to examine specifically how these Thai university students learned through writing while performing sample tasks in which reading and writing were integrated.

Research Questions and Key Terms

I devised four research questions to guide the inquiry:

Question 1: How is writing used in the reading class?

Question 2: How may writing in the course help students learn language and content from texts?

Question 3: How do the instructor and peers help students learn from texts through writing?

Question 4: What are the types of writing initiated by students when they are reading in English?

To guide my analyses in the observational phase, "writing tasks" were defined as writing activities which were designed to help achieve a particular learning goal (adapted from Richards, Platt & Platt, 1992) whereas "routines" were behavioral units which were reported or which I observed to structure and focus pedagogical activities through sequences of verbal exchanges between teachers and students (adapted from Cumming, 1992). In the task analysis phase, I defined "the potential for language learning" operationally as: participants' noticing of target forms in the source text as a result of having written about the topic in the text or their attempts to solve language problems while writing about the source text (adapted from Swain & Lapkin, 1995). (See Appendix A for details.)

Participants

The participants in this study included a Thai EFL instructor and 15 female undergraduate students from an EFL reading class held twice a week at a major university in Thailand.

Data Collection

The study had two complimentary phases: **the observational phase** and **the task-analysis phase**. The former phase yielded naturalistic data, preserving the ecological validity by working with real learners and the instructor in the classroom context, while the latter phase elicited focused, specific information in a controlled condition. This also allowed me to determine how the information obtained during the task-analysis phase varies according to the nature of the tasks and the task contexts.

My data collection schedule is presented in Table 1. The observational phase, which started in week 2 of the course, lasted throughout the term while the task-analysis phase (represented by a bold and italic font) was carried out during week 6 of the course.

Table 1 Data Collection Schedule

<table>
<tr><th>Beginning of Term
(Week 2)</th><th>Mid-term

(Week 6)</th><th>End of Term</th></tr>
<tr><td colspan="3">10 sessions of classroom observations
(1 hour 30 minutes each)</td></tr>
<tr><td>• Students completed questionnaires.</td><td rowspan="2">• Students performed reading & writing tasks while thinking out loud (~1 hour and 30 minutes each).

• Retrospective interviews (30 minutes each)</td><td rowspan="2">• (Week 11) Interview with instructor (45 minutes)</td></tr>
<tr><td>• Interviews with students (30 – 45 minutes each)

• Interview with instructor (45 minutes)</td></tr>
<tr><td>• Think-aloud training with each student (30 minutes each)</td><td>• Interviews with students (30 minutes each)

• Interview with instructor (60 minutes)</td><td>• (Weeks 10-14) Students kept written logs.</td></tr>
</table>

1. Observational Phase

After obtaining the informed consent of the department head, the instructor, and the students, I started my data collection in the second week of the university term. In the observational phase, to elicit information on students' personal and EFL background, I asked each student to fill out a background questionnaire.

In addition, to determine the uses of writing in the English reading class, I carried out naturalistic observations of the class over a period of 4 months for a total of 10 visits lasting 1 hour and 30 minutes each. During each class visit, I sat in a chair at the back of the classroom, taking field notes and engaging in small talk with students before or after class, but not participating in class activities. While taking the field notes, I attempted to document how writing was taught and practiced and the routines that the instructor and students performed. Immediately after each class meeting, I annotated and clarified the field notes for general patterns that emerged over the visits. The first few visits revealed to me not only the uses of writing in the class but also how the instructor and peers took part in helping students learn from texts through writing. I considered this issue to be relevant to the study even though it was not one of the original research questions. Therefore, I adjusted my research questions accordingly.

During the same period, I conducted three separate interviews with the instructor and two interviews with each student. The repeated interviews were expected to verify the accuracy of participants' answers, to assure that the data were complete, and to observe

changes in the participants' attitudes over time. During the first interview, I took notes of their key answers so that I could compare them with the answers in the subsequent interviews. In this way, I could identify a mismatch of their answers and ask them if they had changed their minds and why or if they thought their original answers were inaccurate. However, their answers appeared to be consistent. The questions focused on (a) the types of writing used in the class, (b) the students' typical strategies in handling reading assignments and (c) the role of writing in students' learning from texts. The interviews were semi-structured in that I used structured but open-ended questions, providing uniformity across interviews but still allowing the participants to volunteer information and pursue interesting lines of discussion. I audio-recorded the interviews, took detailed notes during the interviews, and collected the course outline and samples of instructional materials.

The interview question about the students' strategies for handling reading assignments led me to a new issue that was not covered by the original research questions – writing initiated by students when reading. In my opinion, this issue is also relevant to the present study, so I adjusted my research questions accordingly.

My original plan was to have three interviews with the students. However, the two interviews with the students revealed that their answers were consistent, and there was not much more additional information in the second interviews. I also noticed that the participants were able to articulate more elaborate and specific details about how writing helped them learn from the source text when they had a chance to talk about it right after they finished the reading and writing tasks. (See the Task-analysis Phase described below.) Therefore, instead of interviewing them for the third time, during the last month of my data collection, I asked the students to keep written logs of their uses of writing immediately after their daily reading activities. This decision appeared to be productive. Not only did the data from written logs confirm what I had discovered from the interviews, but they added new insights to the findings.

I interviewed the instructor after three of the reading classes. Each time I met with her, she consistently came up with new ideas about the course and her students; therefore, the number of interviews remained the same as what I had proposed in the original plan for this research.

2 Task-analysis Phase

The main objective of this phase was to explore the thinking processes of the students while they were performing the tasks in which reading and writing were integrated.

2.1 Reading and writing tasks. I selected five news articles from major English newspapers in Thailand. News articles were chosen primarily because they are the kind of material that is easily accessible to the students. I then asked three other university EFL instructors in Thailand to read the news articles and to choose the one that they thought was appropriate for the level of the students and for the purpose of the study. They all agreed on the article entitled 'University entry to be reviewed' from *The Nation*. For the writing tasks, I adapted Spack 's (1996, p. 11) Write-before-you-read procedures and Langer and Applebee's (1987, p. 95) essay writing task. These two types of writing were chosen since they have been proven to promote reading abilities and high-level thinking in previous research. The instructions that students received for the tasks were in English:

Task 1 Pre-reading task:
Instructions: Write 2-3 paragraphs to express your opinions regarding the following statement:
"Multiple-choice tests in the university entrance examination should be replaced by subjective tests, in which an examinee has to write in response to each question."

Indicate if you AGREE or DISAGREE with this statement and why. Support your ideas with what you know about this topic. Remember that the more relevant information you use to support your ideas, the more convincing they are.
Note: You are advised to spend at least 20 minutes but not more than 30 minutes on this task. Please do not erase any mistakes, but simply cross them out and continue writing.

Task 2 Reading task:
Instructions: The purpose of your reading is to learn from the text that will be given to you. If necessary, you can use the dictionary provided. As you read, feel free to mark or write anything on the text. There is no time limit.
Note: While reading, you may refer to what you wrote in Task 1, if you would like.

Task 3 After-reading task:
Instructions: Given what you have learned from the text, write 2-3 paragraphs stating what type or types of tests – multiple-choice tests, subjective tests, or both – should be used in the entrance examination and why. You may do this by revising your first draft or producing a new piece of writing. There is no time limit.
Note: You may refer to your first writing and the text that you just read.

2.2 Pilot study.

After developing the original reading and writing tasks, I conducted a pilot study to field-test the appropriateness of the tasks and the reading material. The pilot study included 4 female native-speakers of Thai. I met with them individually. During each meeting, the participant was trained to produce think-aloud protocols. Then, she was instructed to work on the reading and writing tasks while thinking out loud. Upon finishing the tasks, I interviewed the participant to document how she thought writing helped her learn from the English text. Based on the outcomes of this pilot study, necessary modifications were made to the tasks, for example, adding paragraph numbers to the source text to help participants refer to them easily while talking about them, and including some notes to emphasize what they were allowed or not allowed to do during the tasks.

Analyses

1. Observational Phase

To analyze all the oral and written data, I transcribed the observation field notes, interviews, questionnaire items, and written logs using a transcribing machine and a text-processing program, Microsoft Word, to form a database. I made no attempt to translate my data from Thai to English or vice versa because doing so might inevitably compromise its accuracy. Secondly, I transferred the data files from Microsoft Word to computer software for qualitative data analysis, NVivo. The main functions of this program are to facilitate and keep a record of my data and to assist in my searching for specific segments in the data.

I then reread the transcripts, my notes, and samples of course documents four times in order to identify categories that the students and the instructor expressed about the uses of writing and the role of writing in students' learning from texts. I noticed that participants' reports of their experiences could be segmented into meaning units ranging from one sentence to a whole paragraph.

In developing my coding system, I compared the categories to eliminate redundancies and clustered them together once I noticed that they were related. I then examined all categories that came up at that point and selected only the ones corresponding to my four research questions and grouped them together in the following main categories: (a) Uses of writing, (b) Learning through writing, (c) Support from instructor and peers, and (d) Writing initiated by students. My findings in the observational phase, therefore, represent conceptualizations commonly expressed by the participants regarding the four main issues related to the four research questions.

To check the reliability of my coding procedure, I explained my coding scheme to another Thai graduate student in a language education program, and asked her to code 10% of the transcribed data after a practice session. In preparing sample segments for the reliability check, I gave each category three sample segments. When data were retrieved from different sources (i.e., students, the instructor, and the researcher (in his observation field notes)) I provided three sample segments for each source. I then compared her coding with my own and found that in 83% of the cases she had used the same codes to code the data. In addition, eight months after the initial coding, I re-coded 10% of previously coded data. Comparison of the two sets of coded data showed an intra-coder reliability of 91%.

2.Task-analysis Phase

I analyzed the think-aloud protocols by focusing on the transcribed discourse during which participants reported on their decision making about their reading and writing. Units of these decisions were segmented into meaning units. The analysis focused on the types of thinking the tasks foster. Seeking evidence that writing about the text may contribute to learning, I coded the protocols using the criteria adapted from (1) language related episodes (Swain & Lapkin, 1995) for language learning (See Appendix A for detailed descriptions). "Language learning" was operationally defined as: participants' noticing of target forms in the source text as a result of having written about the topic in the text or their attempts to solve language problems while writing about the source text.

Three main categories I selected in order to answer my research questions related to language learning in the task-analysis phase are: (a) Language learning while writing before reading, (b) Language learning while reading as a result of writing before reading, (c) Language learning while writing after reading. My findings in the task-analysis phase, therefore, represent ideas commonly expressed by the participants regarding these three issues. Meaning units in certain categories (i.e., episodes of students searching for the 'right' words while writing before reading, episodes in which target words received students' attention while reading and while writing after reading) were counted because I considered these units to be relevant to quality of learning.

In general, procedures to maintain their reliability in the task-analysis phase were the same as those procedures described for the observational phase. I found that my partner and I had used the same codes in 87% of the cases to code the data from the think-aloud protocols and in 84% of the cases to code the data from the retrospective interviews after the tasks. In addition, eight months after the initial coding, I re-coded 10% of previously coded data. Comparison of the two sets of coded data showed an intra-coder reliability of 85% for the think-aloud protocols and 98% for the retrospective interviews.

Findings

The findings pertaining to language learning were drawn from interviews with the students, their written logs, and think-aloud protocols. My impression from interviewing the students, and reviewing their written logs and think-aloud protocols was that generally the students viewed writing as a means of learning. Indeed, they seemed to have profound understandings of how writing affected their learning. In particular, my analyses suggested that writing played crucial mediating roles in their ability to learn both language and content from English texts. Combinations of five main properties of writing seemed to influence the students' text-based learning:

1. Writing allowed readers/writers to notice gaps in their knowledge;
2. Writing prompted readers to assume the role of writers;
3. Writing involved careful thinking;
4. While writing, readers/writers were often forced to review, rethink, think further about and use information in the source texts and, sometimes, study related texts; and
5. Whatever was written down could be reviewed, reflected on, and revised.

Writing was reported to contribute to the learning of language from texts in three primary ways: (a) drawing learners' attention to text language forms; (b) prompting learners to use text language forms and other related forms strategically and (c) familiarizing readers with text characteristics. By language forms, I mean the means by which an element of language is expressed in writing (e.g., uses of words, spellings, applications of grammatical rules) (adapted from Richard, Platt & Platt, 1992). I also produced (by scanning through the transcript segments several times for words the students mentioned and that they might thus have been learned) a table in Appendix B to show words that received students' attention due to writing during the think-aloud tasks.

1. Drawing learners' attention to text language forms and other related forms. One way writing may contribute to learning of language forms in a text is by drawing learners' attention to these forms. That is, while working on a writing task, the task may prompt them to pay attention to text language forms and other related language forms.

The retrospective interviews revealed that writing before reading prompted the participants to pay conscious attention to text language forms, particularly vocabulary in the source text while reading. For example,

> I found words that I wanted to use in the first draft. But they didn't come up when I was writing. These words *struck* me while I was reading the text. For example, this word in the text 'examiners'… I used 'checkers' in my first draft or the word 'mixture' … you know … they wanted to combine the two tests … in the first draft I used 'including'. I think I should use the words from the text. (Nuch)

> This helps me learn vocabulary. Words that I wrote in my first draft were colloquial language. Perhaps, they should not be used in writing. I should have used more formal words like the words I found in the text. For example, I should have used the word 'assess' instead of 'measure'. (Cheewa)

According to their think-aloud protocols, while writing before reading, among 101 episodes in which the students attempted to solve language problems, they engaged in searching for the 'right' words more often (56%) than thinking about how words should be spelled (9%) or focusing on grammatical rules (31%). Furthermore, the language-related episodes produced while the students were reading the source text after writing involved many verbalizations of target words or phrases. The students talked about words or phrases that they could have used while writing before reading or about vocabulary that could be used in the writing task after reading. (See Appendix B, Words receiving participants' attention due to writing.) For

example, in their speech produced while students were writing before reading (See Appendix C for the transcript conventions):

Searching for the 'right' words:
Although they were, although they were **distracted**, the word 'distract', although, although they were given, they were given, given, were given, were given, many choices, choices, many of them, choices which may be close to each other. (Arun)

Therefore, it's up to the examiners, the examiners, it's up to How do I say 'examiners' in English? Ok. I'll use the teachers then, who hmm … correct the test. (Suwanna)

Thinking about how words should be spelled:
in each teacher's opinion –n-i-o-n, -n-i-o-n opinion. (Jinda)

many techniques, technique How do I spell this word? technique 'q' many techniques. (Nipa)

Focusing on grammatical rules:
Students in many schools doesn't. No. **don't**, don't have any chances, don't usually have a chance to, don't have any chances to express, express their opinions, their opinions. (Nipa)

It, It hard, It**'s** hard *adjective* It's hard, It's hard to, It's hard to to There is no perfect answer. It's hard, It's hard to answer perfectly. (Jinda)

However, while students were reading a source text their speech took a different form:

Verbalizing target words or phrases:

Because they cannot assess. Ah! assess I can use 'assess'. Umm 'Assess' is probably a better word, isn' it?, assess, assess, I should have used 'assess.' (Wipa)

Ok. I'd better reread that part. I used 'checkers' in the first draft. Now, continue reading. Ah … in here the author uses 'examiners' (Trungchai)

Because many writing tasks assigned in the course called for specific text information, students sometimes had to reread parts of a text with unfamiliar words or sentence structures in order to retrieve the information. Then, they wrote down the answers, ideally, in their own words. In fact, a student commented that some questions in *What does the writer think?* tasks were designed in such a way that forced her to focus on these features while writing in response to the questions: "some questions were probably designed to ask for information from complicated sentences that are difficult for us to understand. We are uncertain about what these sentences mean." (Suwanna)

However, sometimes students who already knew the answers to these questions still reread the text, not to search for answers but to use the language in the text as a model for their own writing. That is, the students voluntarily paid special attention to text language on their own in order to produce a good piece of writing: "Even though I already knew the answers, sometimes while answering the questions I reread the text to see how the author uses his/her language because I don't know how I should put it." (Nuch)

Likewise, although certain tasks like *What do you think?* and journal writing did not explicitly ask students to use text information, students focused attention on the text language

in order to use it as a point of departure for their own writing. In some cases, they actively searched for related words to replace them. For instance,

> When I find words in the text that seem to be more formal than I usually use, I would look it up in a thesaurus and replace them with words that are less formal so that the words fit my own writing. But if I am still uncertain about these words, I would seek help from Activator (a production dictionary) to see how I should use them. (journal writing: Pin)

Their think-aloud protocols also revealed that due to writing, certain words in the source text received students' attention so they might potentially use the words later. The following segment was produced while Arun was reading a source text. At the time she was aware that she had to create a piece of writing based on what she had read: "The article talks about **fairness of examiners**, rely on, I can use this person's words, I'd better note this down" (Arun) [Later on, she used 'fairness of examiners' in her writing.]

The following episode demonstrates how Sangdao's attention was drawn to words in the source text:

> **Speaks:** Now, I want to write about the idea that subjective tests may not be fair.
>
> **Reads and Speaks:** In the text, Here it is (triumphantly) paragraph 4*
>
> **Speaks and writes:** the problem of unfairness (Sangdao)
>
> [*Text: Examinee's scores, furthermore, would rely on the fairness of examiners.]

First, she searched for a word to use in her writing. Then she turned to the source text for help and found that the word 'fairness' in the text was helpful. Finally, she turned 'fairness' into 'unfairness' to fit her intended message.

Lastly, in completing many tasks, students were explicitly required to transpose text information into their own words. In doing so, they reread parts of a text with unfamiliar words and sentence structures and thought about other language forms in order to replace them. The clearest example was paraphrasing: Wanna commented, "when I was asked to paraphrase an active sentence, I would think of a passive form of that sentence." Similarly, outlining and summarizing demanded students' abilities to paraphrase texts:

> When we find the text information that we need, we still have to organize our answers in a systematic way. For example, we use –ing form for each answer, even though this is not its original form in the text. I have to make some changes. (Outlining: Suwanna)

In sum, the data show that writing tasks drew learners' attention to text language when they were required to write about a topic prior to reading the text on the same topic, when the writing tasks were designed in such a way that directed learners towards target forms, when learners considered language in the text a model for their own writing, and when they made an attempt to transfer information in the text into their own words.

2. Prompting learners to use text language forms and other related forms strategically. As stated earlier, students occasionally made use of language in the text to enhance the quality of their own writing; moreover, they often paraphrased text information that had been retrieved from the source texts. But how exactly did these students handle text language while writing from sources? My analyses show that the students dealt with text language in

three major ways: (a) paraphrasing text; (b) borrowing words or phrases from text; and (c) copying clauses or sentences verbatim.

The most revealing pieces of evidence about how learners' attempts to paraphrase text may have contributed to their language learning were from their think-aloud protocols. While engaging in the writing task after reading the source text, the students sometimes noticed that they were facing difficulties in using text information, so they tried to solve these problems by relying on their language knowledge or the dictionary. (Also see Appendix C.) For example,

> **Speaks:** Multiple-choice tests, I can use their words, Multiple-choice tests cannot
> **Reads text:** could not be assessed
> **Speaks:** Hmm
> **Speaks and Writes:** Multiple-choice tests can't be assessed, assess, cannot, can't assess **I don't need 'be' anymore** can't assess the examinees, Multiple-choice cannot assess their abilities, **can't assess** the writing ability. (Arun)

Having made an attempt to use text information (i.e., "their ability to think critically **could not be assessed** through multiple-choice tests"), Arun realized that since she had started out by using "multiple-choice tests" as the subject of her sentence she could no longer use the passive form in the text. She then wrote down "can't assess" instead.

In the following episode, Suwanna attempted to paraphrase "hard to read" with support from the dictionary:

> **Speaks and writes:** the examiners who, who illegible can't be read, illegible
> **Uses dictionary:** illegible, illegible, uh
> **Speaks and writes:** has an **illegible** handwriting (Suwanna)

Borrowing words or phrases from the text appeared to be the most frequent approach. Students reported that they tended to copy words that they thought were specific to the theme of each unit. Sometimes they tried to modify these words to fit their own sentences (e.g., by changing parts of speech). As Jinda commented, "I usually borrowed some words from the text, mostly vocabulary words. I put these words in my own sentences." Similarly, Wanna and Nipa reported, "Mostly I borrow key words. You see? There are key words in the articles that we read. I think if I tried to replace them with synonyms, the synonyms would not convey messages that the authors intended." (Wanna)

> I borrow key words. Sometimes, I can't think of what words to use. But I do put these words in my own sentences. I don't usually try to use their sentence structures. I'm afraid that I wouldn't be able to use them correctly. (Nipa)

In line with these findings from the interviews, their think-aloud protocols suggested that sometimes when students could not find words to use in their writing, they turned to words or phrases from the text. (Also see Appendix C.) For example,

> **Speaks:** I'd better look at that sentence in the text.
>
> **Reads 1st draft:** I used 'standard … give points' in the 1st draft. The author used **scoring criteria**.
>
> ['Scoring criteria' appears in her 2nd draft.] (Tasanee)

Reads: The possible alternative would be (two rounds of examination).

Speaks: That is, That is, there should be two rounds.

Speaks and Writes: the entrance examination should be divided, should be divided to **two rounds of examination**. (Wanee)

According to my classroom observations and the think-aloud protocols, a less common practice among the students was to copy clauses or sentences from the text verbatim. For instance,

Speaks and Writes: so this, so this would actually

Speaks: so No. I made a mistake.

Speaks and Writes: so **subjective tests could actually worsen the effectiveness of university entrance exams instead of upgrade, of upgrading them**.* (Tasanee)

[*Text: since test examiners' scoring criteria would naturally vary, subjective tests could actually worsen the effectiveness of university entrance exams instead of upgrading them.]

This seemed to be a subconscious process, perhaps prompted by pressures from other immediate concerns because students were aware that they should not copy texts extensively:

> When I reread the text I try to focus on specific words that I want to borrow. I try not to look at ideas. I am afraid that I may copy the text verbatim. I know I'm likely to go in that direction. I don't intend to do so. I just feel that the author communicates his/her ideas so well. This is totally unintentional. (Pin)

> I borrowed only words from the texts. I wrote my own sentences. If I copied chunks of what the author wrote, they would not fit the rest of my sentences. Ah… the readers may think how come I turn into a genius all of a sudden! (Wanna)

In sum, the present data indicate that writing from sources may be conducive to language learning by prompting students to manipulate target forms in the source texts. As I have demonstrated, writing in this way either guides learners to explore their own knowledge related to text language and to consolidate it in the process or it prompts them to seek help from other sources of knowledge (e.g., dictionaries), giving them a chance to discover new knowledge.

3. Familiarizing readers with characteristics of texts. Many students stated that having to produce their own texts made them think about significant features of argumentative texts and what they had to do to create their own texts (e.g., whether the text is organized, effective, convincing and/or capable of withstanding criticism). Writing in this way may help students become better readers because it familiarizes them with the characteristics of argumentative texts and expert writers' ways of thinking.

Writing related to this type of thinking appeared particularly in the writing tasks that asked for students' opinions such as *What do you think?*, journal writing, and reading

projects. Writing tasks of this nature prompted the students to think about how to create effective arguments. In producing their responses, first they read carefully and examined the way the author supports his/her position to find weak points or ideas that they disagreed with and that they could argue against: "The author of the article in the textbook supports dam building. But I disagree. So I tried to argue against his idea. He supported his ideas using benefits of dams. In my writing, I stated disadvantages of having dams." (Jinda)

Then, they searched for information from different sources (e.g., Internet, newspapers, magazines, library books) to support their own arguments:

> Before I can comment on author's ideas, I have to know the topic well. I need information that can be used to convince my audience. When I wrote about dam projects, I read newspapers or visited some web sites for relevant information. Now, I know a lot more about dams even though I was not concerned about this topic before. (Nuch)

The most frequent source of information the students used was the Internet. Interestingly, sometimes they also consulted reading materials that they had read before and their friends as well as family members.

This type of writing may give students insight into the development of ideas they can expect from the texts that they read primarily because they had to produce their own argumentative texts similar to the ones they had been reading. While writing, they thought about their audiences and ensured that they expressed themselves clearly. They checked whether their writing was well organized, sensible and relevant to the topic being discussed. As Numtip stated, "I tried to write in such a way that even those who had never read about this topic could understand what I wrote. I should express myself clearly."

Discussion

"Planning what to teach is always possible but predicting what gets learned is not" (Kantznelson, Perpignan & Rubin, 2001, p. 157). Like Kantznelson et al. who investigated what they called "by-products" – intrapersonal and interpersonal growth – developed along with the development of EFL writing among their university students, I have become intrigued by the unexpected outcomes of "what gets learned" in the course under investigation. The following paragraphs address numerous "by-products," potentially due to integration of writing in the reading course, some of which were not planned by the course syllabus or the instructor.

Consistent with findings of previous studies (see, e.g., Cumming, 1990; Schmidt & Frota, 1986; Swain & Lapkin, 1995), I found that purposeful uses of the L2 prompted learners to become aware of gaps in their knowledge and the need to fill those gaps. Schmidt (1990) emphasized the importance of noticing in L2 learning arguing that it accounts for which features in the input L2 learners attend to and so become intake (input conducive to learning). As Schmidt and Frota (1986) stated, for noticed input to become intake, learners have to make a comparison of what they have observed in the L2 input and what they themselves are typically producing on the basis of their current language system. Likewise, Swain and Lapkin (1995) suggested that

> noticing may occur because of either internal or external feedback which may prompt, for example, the generation of alternatives and assessment of them through simple inspection to complex thinking. When learners cannot work out a solution, they may turn to input, this time with more focused attention, searching for relevant input. Or, they may work out a solution, resulting in new, reprocessed output. (p. 386)

From a pedagogical viewpoint, Long (1991) introduced the concept of 'focus on form' which he described as an approach that "overtly draws students' attention to linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning or communication." (pp. 45-46) According to Long, this type of engagement in meaning with attention to linguistic features is more effective in promoting L2 learning than the traditional grammar teaching which focuses on forms in isolation.

My study has systematically investigated how Thai EFL students processed input in English as a result of having to write before reading. Data from think-aloud protocols and interviews have provided evidence for the conscious-raising function of output. Writing before reading did cause learners to notice gaps in their knowledge by prompting them to (a) search for the 'right' words to use in their writing, (b) think about how words should be spelled, and (c) focus on grammatical rules. Importantly, while reading the source texts after writing, they focused their attention on target forms, particularly unfamiliar vocabulary, knowing that they had wanted to (but had not been able to) use them and that these words would come in handy in the following writing task.

These findings support Cumming's (1990) and Swain and Lapkin's (1995) findings that searching for the 'right' words while composing was a hallmark of many participants in their verbal reports and less frequently they produced episodes that involved reasoning about grammatical rules. As Swain and Lapkin (1995) suggested, the recognition of linguistic problems leads to the process that either generates linguistic knowledge that is new to the learners (e.g., looking up words in a dictionary) or consolidates their linguistic knowledge. Nevertheless, these previous studies did not prove whether the awareness of problems during writing prompted learners to pay focused attention on subsequent input. The current study further demonstrates how learners who had linguistic difficulties while writing behaved when confronting target forms, particularly unfamiliar words: They did focus their attention on these words while reading the text:

Consciousness-raising function: ***Noticing gaps in linguistic knowledge*** (Wipa searching for the word 'assess' through the use of her L1 while writing her 1st draft) assess, can better assess, subjective tests are, opinions … Or, is 'show' a good word? Tsk! How about 'indicate, indicate, indication'? And 'check,' and it's a way to 'show.'
***Processing input*:** (Wipa paying focused attention on the word 'assess' while reading the source text after writing her 1st draft) Because they cannot assess. Ah! assess I can use 'assess'. Umm 'Assess' is probably a better word, isn' it?, assess, assess, I should have used 'assess.'

Izumi, Bigelow, Fujiwara, & Fearnow (1999) attempted to test the effects of output on noticing and L2 acquisition through an experimental study. The results seem to suggest that output led to noticing and L2 acquisition among ESL college students. However, the study provides only partial support for this aspect of the output hypothesis due to cognitive demands from the tasks devised for the study and the possibility that the tasks might not have been able to adequately control learners' focus of attention.

Having closely examined the findings of the current study, I noticed that the incidents of the participants paying focused attention on input were far less frequent while reading (i.e., totals of 12 in the think-aloud protocols and 24 in the retrospective interviews) than the 101 incidents of searching for words while writing. As suggested by the vocabulary learning hypothesis (Nagy & Herman, 1985), this may be because words are learned incrementally through repeated exposure. Moreover, only one out of 15 students who performed the writing-before-reading task reported that reading the source text made her realize that she should have used a different tense (i.e., the past tense instead of the present tense) in one part of her writing. It may be the case that learners with advanced L2 proficiency are more capable of verbalizing their acquired metalinguistic knowledge than are less advanced

learners (Hawkins & Towell, 1992). Nevertheless, this should not rule out, as I would like to suggest, the possibility that learning of grammatical rules, since they are not as salient as words (i.e., grammar represents "types" and words are "tokens"), may take a long time to acquire through incidental processes of learning such as appear in reading or writing performance. Also, the nature of input and tasks might have contributed to what the learners paid attention to while reading after writing their first draft. Swain and Lapkin (in press) designed a series of tasks in their research to find evidence in support of dialogue as a part of the L2 learning process. Two seven-grade students were required to (a) watch a videotaped lesson on pronominal verbs in French, their target language, including a segment where two students modeled a jigsaw task – an information-gap task in which they took turns telling a story based on a series of pictures each of them had and wrote out the story together, (b) do a similar jigsaw task, first orally and then in writing, (c) use a highlighter to mark the differences between their writing and the reformulated version of it – a revised version of the students' writing produced by a native speaker to reflect target-language usage, yet maintain the students' original meaning, (d) while watching the videotape of what they were doing in (c), state what they were thinking while marking the differences, and (e) rewrite their first draft individually. Unlike the findings from the current study that while being exposed to the text after writing their first draft, the participants focused primarily on vocabulary, the analyses of the talk during (b), (c), and (d) in Swain and Lapkin's study show that their participants paid more attention to form (52%) than to lexis (28%) or discourse (20%). In my view, the discrepancies in our studies may stem from the facts that: (1) the participants in Swain and Lapkin's study were initially exposed to a target form before writing their first draft, (2) the pictures in the jigsaw tasks attempted to elicit the specific target form, and (3) the input text in the study was a short paragraph written in such a way that represents the native-like usage of the participants' intended messages (e.g., 'souvien' becoming 'se souvient'). These factors, which were not available in my study, might have heightened their participants' awareness of grammatical rules more than other linguistic elements, prompting them to focus on form (i.e., accepting or rejecting the reformulated version) accordingly. (See Swain & Lapkin, 2001 for further discussions on task effects.)

Further, the findings from the present study provide evidence for the hypothesis-testing function and the metalinguistic function of output. Drawing on the findings from Pica, Holliday, Lewis, and Morgenthaler's (1989) study that learners modified their responses to clarification and confirmation requests over one-third of their utterances, Swain (1995) suggested that these learners must have been testing their own hypotheses about their target language through language use and that if this had not been the case, changes in their output would not have occurred after feedback. Moreover, studies that traced learners' cognitive process through their dialogues during collaborative writing tasks (e.g., LaPierre, 1994, Kowal & Swain, 1997; Swain & Lapkin, 1998, in press) indicated that the writing tasks gave rise to occasions in which the learners formed and tested their hypotheses and used language to reflect on their own language use in the process of solving linguistic problems. The following evidence from the retrospective interviews and the think-aloud protocols from the current study confirm the findings of these previous studies:

Hypothesis-testing function: (Interview with Namtip) "um, In the first draft, I used 'accurate.' In the second draft I used 'justified' from the text."; (Interview with Wanna) "In the first draft, I didn't use 'examinees.' I used 'students who take the exam.' Then, I found 'examinees' in the news article and decided to use it in my second draft. I think this word is more specific."; (Trungchai thinking out loud while reading the text) Ok. I'd better reread that part. I used 'checkers' in the first draft. Now, continue reading. Ah … in here the author uses 'examiners' [She then used 'examiners' instead of 'checkers' in her 2nd draft.].

Metalinguistic function: Arun thinking out loud while attempting to paraphrase the source text:

Speaks: Multiple-choice tests, I can use their words, Multiple-choice tests cannot
Reads text: could not be assessed*
Speaks: Hmm
Speaks and Writes: Multiple-choice tests can't be assessed, assess, cannot, can't assess **I don't need 'be' anymore** can't assess the examinees, Multiple-choice cannot assess their abilities, **can't assess** the writing ability.
[*Text: their ability to think critically **could not be assessed** through multiple-choice tests.]

Recent research has shown that the number of occasions in which learners reflect on their own language use or Language Related Episodes (LREs) in peer-peer interaction and their performance (from posttest scores) are positively related (Swain & Lapkin, 1998). As Swain, Brooks, Tocalli-Beller (2002) phrase it, "some LREs were in fact the site of learning" (p. 2). This might be because

> [such an occasion] may well serve the function of deepening awareness of forms and rules, and the relationship of the forms and rules to the meaning they are trying to express; it may also serve the function of helping students to understand the relationship between meaning, forms, and function in a highly context-sensitive situation (Swain, 1998, p. 69).

To sum up, the present study provides evidence of language use (writing in connection with reading) as an occasion for L2 learning. The findings support the three functions of the output hypothesis: consciousness-raising function, the hypothesis-testing function, and the metalinguistic function. I have demonstrated that writing before reading caused the participants to notice gaps in their linguistic knowledge and to pay focused attention on target forms, particularly vocabulary words while reading the source text. In addition, they replaced words that they had used in their first drafts with words from the text, confirming that output has given them a chance to test their hypotheses of how to convey intended messages. Finally, and importantly, writing from sources gave rise to occasions in which the learners used their L1 (in this case, within their internal dialogues) to isolate particular L2 forms so that they could consciously reflect on the linguistic forms, allowing them to form and test their hypotheses and to closely examine those forms.

The evidence in the previous paragraphs can also be described in light of Olson's theory of the cognitive consequences of literacy. Olson (1994) explained that

> Writing was responsible for … turning aspects of language into objects of reflection, analysis and design. … writing provides a set of categories for thinking about language. This is not to say that the only consciousness of language is script induced but rather that in learning to write and read one comes to think of speech in terms of the entities in the representational system. Writing provides a series of models for, and thereby brings into consciousness, the lexical, syntactic and logical properties of what is said. (pp. 258-259)

The metacognitive activities that Olson discussed may be considered for my findings in terms of writing processes and writing products. Engaging in writing tasks before reading prompted the students to think about linguistic forms to be used in their writing and to

process language input while reading in a unique way (e.g., "… not good at expressing their ideas … I can also use "ideas" to mean "opinions," Wipa). Moreover, what the students wrote down, their writing products, may have offered them the opportunity to stand back and reflect on areas of difference between their own usage and the way meaning was conveyed in the texts (e.g., "Even though I already knew the answers, sometimes while answering the questions I reread the text to see how the author uses his/her language," Nuch).

Implications of the Study

The present study has implications for our current knowledge of L2 learning in general and the connection between the integrative uses of L2 reading and writing and L2 learning in particular. Specifically, my account of the process by which learning from texts through writing may occur should help guide L2 educational policy makers, curriculum designers, material developers, and instructors who consider their contexts comparable to the one discussed in this study to make informed decisions about what benefits might ensue in terms of students' learning if they are to incorporate certain types of writing into EFL reading lessons. I discuss implications of the present study in the following areas: curriculum development and instruction.

1. Curriculum Development

In light of the evidence that sometimes learners simply copy clauses or sentences from source texts verbatim, it might be worthwhile to raise students' awareness of steps they can take to synthesize text information in their writing not only to show them potential ways to maximize their learning but also to avoid unintentional plagiarism. (But also see Pennycook's (1996) interesting discussions of the benefits that "borrowing words" may have for EFL learning as well as Foucault's (1980) view of authorship as lacking substantial grounds and merely a construction of modernity.) Like the instructor/textbook author in the present study had, it is advisable that other material developers introduce paraphrasing exercises and the concept of plagiarism, which may not necessarily be obvious to L2 learners, in their textbooks for relevant courses.

2. Instruction

As my analyses have revealed, writing about the topic to be read about allowed learners to engage in significant forms of meaning making, presented them with challenging problems for communication and resulted in the students processing language input in a way that may be integral to L2 learning while reading. I would propose that this type of writing task long considered simply a way to promote readers' readiness for reading, should now be viewed as a way to learn language as well, and the uses for such tasks in L2 classes should be adjusted accordingly to achieve their optimal potential.

Finally, the incidents of students recognizing the words they had wanted to use before reading were far less than the ones in which they searched for the 'right' words while writing before reading. Only one student recognized, while reading the source text, that she should have used a different tense in her writing. This suggests that such incidental learning occurs gradually, and perhaps there may be room in this type of task for direct instructional intervention to enhance students' learning from L2 texts. An instructional focus on grammatical rules, in particular non-salient ones, arising from learners' engagement in meaning and uses of reference works (e.g., dictionaries, grammar books), may be good candidates for improving their L2 proficiency as suggested by many scholars (e.g., Scholfield, 1997; Harley 1993).

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Appendix A

Criteria for Potential for Language Learning

- Language-related episodes (Swain & Lapkin, 1995):

  Definition:

  … any segment of the protocol in which a learner either spoke about a language problem he/she encountered while writing and solved it either correctly or incorrectly; or simply solved it (again, either correctly or incorrectly) without having explicitly identified it as a problem (p. 378).

The language-related episodes from Swain and Lapkin's study can be categorized into seven types as follows:

a. sounds right/doesn't sound right
b. makes more sense/doesn't make sense
c. applies a grammatical rule
d. lexical search
e. translation (phrase or greater)
f. stylistic
g. spelling

Appendix B **Words**

Receiving Students' Attention due to the Three Writing Tasks

Student	Writing before reading	Reading		Writing after reading	
	No. of episodes of Ss' searching for the 'right' words (101 episodes)	Episodes of words receiving students' attention (Think-aloud) (12 episodes)	Reports of words receiving students' attention (Interview) (24 reports)	Episodes of words receiving students' attention (Think-aloud) (56 episodes)	Reports of words receiving students' attention (Interview) (22 reports)

Arun	11	- fairness of examiners - ***certainly***	- assess	- assess - smart - proper - choices - fairness - rounds (of exams) - appropriate mixture	*
Cheewa	8	-	- ***assess***	- ***assess***	- ***assess***
Jinda	10	-	- ***fairness of examiners***	- administrators - ***scoring criteria*** - justified answers - proper - proportion - consistency - examiners - referees	- administrators - ***scoring*** - proportion - disadvantage - thinking ability - writing ability
Nipa	13	- ***mix between*** - ***pattern***	- ***mixture***	- justified answers - rounds (of exams) - referees - tangible framework	- rounds (of exams) - ***mixture***
Nuch	2	-	- appropriate mixture	*	- mixture - ***examiners***

Notes: (Table continues)

- The list of words under "Writing after reading" deals with the incidents in which the students attempted to paraphrase or borrow words in the source text. It does not include the episodes in which the students copied clauses or sentences from the text verbatim.
- Bold-faced and italic type indicates that there was evidence of the students searching for these words while writing before reading.
- Plain-faced type indicates that there was no evidence of the students' searching for these words while writing before reading.
- * means the students reported that they focused attention on words in the source text without mentioning specific words.

Appendix B (Cont.)

Words Receiving Students' Attention due to the Three Writing Tasks

Student	Writing before reading	Reading		Writing after reading	
	No. of episodes of Ss' searching for the 'right' words (101 episodes)	**Episodes of words receiving students' attention (Think-aloud) (12 episodes)**	**Reports of words receiving students' attention (Interview) (24 reports)**	**Episodes of words receiving students' attention (Think-aloud) (56 episodes)**	**Reports of words receiving students' attention (Interview) (22 reports)**
Numtip	3	- ***fairness***	*	- ***fairness of examiners*** - ***justified answers*** - scoring - the number of - expressing ones' ideas	- ***fairness*** - ***justified answers***
Pin	15	- ***quickly***	- ***examinees*** - ***examiner*** - ***fairness***	- patterns (of exams) - ***scoring criteria*** - ***fairness*** - ***smart***	*
Sangdao	4	- memorising	- ***express ideas*** - ***examiners*** - ***memorize***	- fairness of examiners - handwriting	*
Suntaree	-	-	- ***smart***	- ***smart*** - express ones' opinions	- ***smart***
Suwanna	10	-	- ***criteria*** - ***expressing ideas***	- ability to think critically - effective - formulate (criteria) - ***fairness of examiners*** - hard to read	*

(Table continues)

Appendix B (Cont.)

Words Receiving Students' Attention due to the Three Writing Tasks

Student	Writing before reading	Reading		Writing after reading	
	No. of episodes of Ss' searching for the 'right' words (101 episodes)	**Episodes of words receiving students' attention (Think-aloud) (12 episodes)**	**Reports of words receiving students' attention (Interview) (24 reports)**	**Episodes of words receiving students' attention (Think-aloud) (56 episodes)**	**Reports of words receiving students' attention (Interview) (22 reports)**
Tasanee	10	-	- ***scoring criteria*** - ***critically***	- ***scoring criteria*** - objectively - fairness of examiners - mixture between	- ***scoring criteria*** - ***ability to think critically***
Trungchai	3	- examinees	- examinees - ***referees***	- ***criteria*** - consistency - ***fairness*** - handwriting	- examinees
Wanee	-	-	- examiners - examinees	- rounds (of exams) - formulate - tangible - scoring criteria	- formulate - tangible scoring
Wanna	4	-	- ***examinees*** - referees	- assess - examiners - referees -	- ***examinees*** - referees
Wipa	8	- ***writing ability*** - ***standard scoring*** - ***assess*** - ***ideas***	- ***assess*** - ***examiners*** - however	- ***assess*** - assessment tool	- ***standard scoring***

Appendix C

Transcription Conventions

Underlined words	I underlined words in the think-aloud protocols that have been translated from Thai to English. Note that a translated version of data from other sources was not underlined.
Bold-type font	I used a bold-type font for words, grammatical points and ideas in the text that received participants' attention during the think-aloud tasks.
,	I used a comma to indicate false starts (e.g., all of the, all of the text, all of textbook)
…	I put three dots in front of a message to indicate that I have skipped a part in the transcript that was not relevant to the category and might cause confusion if it was to appear there.
< >	When I was not completely sure that I have heard correctly, I enclosed the words about which I was uncertain in < >.
***	When I could not make out what was said at all, each asterisk represents each word I judged to have been spoken.
(unintelligible)	When I could not make out what was said at all and had no idea how many words have been spoken
* *	When I noticed that the participants emphasized certain words by speaking loudly and/or with a high pitch, I put those words in * *.
( )	I put my own observations of the participants' non-verbal behaviors or my clarification of the participants' message in the brackets e.g., (Laughs), I underlined ideas of each person (who were interviewed by the reporters).