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NIDA Language and Communication Journal is the official journal of the Graduate School of Language and Communication, National Institute of Development Administration. The journal, ranked in the first tier of Thai Journal Citation Index (TCI), is currently published as a periodical, with two issues annually (June and December). The purpose of this journal is to disseminate information of interest to language and communication scholars, and others interested in related social sciences. The journal presents information on theories, researches, methods, and ideas related to language and communication as well as related interdisciplinary social sciences. The editors welcome a wide range of academic papers, including research articles, review articles, and book reviews.

Editor's Note

Dear Readers,

In this current issue, we publish five papers and one book review from interesting topics in linguistics, applied linguistics, language testing, and communication. In everyday English, words are very commonly used metaphorically. We use metaphors so regularly that we often don't even register that we are using them. Metaphors help us to express our understanding of the world around us. They add color, vivid imagery, and perhaps emotion to a sentence. The first article, *L2 Writing Processes of Thai Graduate Students* concerns language learners' writing problems. Petcharat Pongkasamepongon and Aree Manosuthikj investigate Thai graduate students' composition writing process based on the model of Chenoweth and Hayes (2003). The result of the study confirms that cognitive psychology methods can be applied to the study of writing expertise and the model used can yield empirical findings that explain cognitive processes which are useful for understanding individual writing performance.

A Prototype of English Metaphorical Expression of Emotions Used by Thai Undergraduate Students, looks into English prototype metaphorical expressions of the primary emotions proposed by Parrott (2011). Piyanuch Laosrirattanachai and Piyapong Laosrirattanachai focus on a model of six emotions of metaphorical expressions of Thai university students. The findings reveal pertinent facts concerning factors influencing the students' limitation of language proficiency and cultural knowledge.

From perspectives on language learning psychology, needs analysis is always helpful for understanding learners' prior learning experiences, motivation, situations they are likely to use the language in, and which skills/language items they need extra practice with. Concerning the importance of learners' particular needs and learning styles, Sasithorn Limgomolvilas and Jirada Wudthayagorn present research on *Needs Analysis of Dispensing Assessment for Thai Pharmacy Students*. Likewise, the study of Parichart Kluensuwan, Tawatchai Chaisiri, Wanpen Poomarin, and Benjawan Rungruangsuparat focuses on the needs of English among engineering staff in an electronics manufacturing context with the aim to developing suitable guidelines and English training courses for engineering manpower. In both studies, the main emphasis is on the notion that conducting a needs analysis should at least involve professionals in the field, language learners, and language teachers.

In the area of language testing, the fourth paper, *TOEIC Reading Section: Evaluation of the Four Cardinal Criteria for Testing a Test*, by Pariwat Imsa-ard, introduces apposite issues on validity, reliability, authenticity and practicality of the TOEIC reading test which are significant qualities to consider. The paper focuses on the appraisal of the reading test which is based in contemporary practices in test validation which is still difficult to evaluate due to many related factors.

Moving onto another area in communication, in the final part of this issue, thanks to Rusma Karla who kindly contributes a book review of *Business Communication:*

Developing Leaders for a Networked World. The book suggests the idea of putting students at the center of business communication through the unique focus on credibility woven throughout all chapters, forward looking vision built on traditional concepts, and practitioner and case-based approach.

We, the editorial team, very much appreciate your interest in our journal and anticipate receiving your academic work for publication in future editions. Thank you very much for your future contributions to the *NIDA Journal of Language and Communication*.

Kasma Suwanarak

Editor

Contents

L2 Writing Processes of Thai Graduate Students

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Abstract

This research aims to discover L2 writing processes of Thai graduate students using the model of composing processes by Chenoweth and Hayes (2003). Participants were six graduate students from Graduate School of Language and Communication. The participants were given an English argumentative writing task to complete while being observed through the use of think-aloud protocol (TAP). The participants were interviewed immediately after finishing the writing task. The finding validates the model of composing processes that Thai students employed were proposing, translating, evaluating/revising, and transcribing process simultaneously. Besides the composing processes, the findings show that there are two main factors (non-language and language factors) influencing the writing processes. Moreover, the result suggests that mentally employing Thai does not obstruct the writing processes; rather, it facilitates the writing activities. It is hoped that this research would shed some light on how Thai L2 students complete text production, and the findings could contribute to a more insightful understanding of Thai graduate students' cognitive processes.

Keywords: writing processes, cognitive language switching, think-aloud protocol (TAP)

Introduction

Writing is one of the language skills which plays an important role in education (e.g., writing a research study, report, academic essay) and in business (e.g., business correspondence). However, good writing is difficult to accomplish. This is because a writing process is complicated and "not only involve[s] the act of writing itself, but prewriting and rewriting, all of which are interdependent" (Zamel, 1982, p. 196).

Research on cognitive processes involved in writing appeared when Hayes and Flower (1980) applied cognitive psychology methods to the study of writing expertise. One of the aims of cognitive research is to better understand "human performance, learning and development, and individual differences by analyzing cognitive processes" (MacArthur & Graham, 2016, p. 25). To understand thinking or cognitive processes, researchers tried to develop models generalized from previous results. These models can yield empirical findings that explain cognitive processes which are useful for understanding individual performance.

Most research on these cognitive writing processes has been developed based on one of the three most influential cognitive models of writing by Hayes and Flower (1980), Wang and Wen (2002), and Zamel (1982). According to Hayes and Flower (1980), there are three basic components in composition: task environment, cognitive processes, and long-term memory. However, the current study only focuses on the second component, the cognitive processes of writing.

In writing or composing processes, it has clearly been indicated that writers plan, translate (write), and review recursively (Flower & Hayes, 1981; Kelogg, 2006). Thus, writing processes in the late 19th century mostly refer to each process as planning (Silva, 1992; Storch, 2005), translating (Storch, 2005; Zamel, 1982), and reviewing process (Sakontawut, 2003; Uzawa, 1996; Zamel, 1982). Later, L1 writing processes have been categorized into four processes which are: 1) proposing, 2) translating, 3) revising/evaluating, and 4) transcribing (Chenoweth & Hayes, 2003). Many studies on composition have found that both L1 and L2 writers have to go through these similar writing processes (Chenoweth & Hayes, 2003; Khongpun, 1992; Manchón, de Larios & Murphy, 2000; Shi, 2012; Uzawa, 1996; Wang & Wen, 2002).

However, there are slight differences between L1 and L2 composing processes (Bennui, 2008; Khongpun, 1992; Pongsiriwet, 2001; Thep-Ackrapong, 2005) which arise due to writing expertise (Sevgi, 2016), writing context (Sasaki, 2004), given time (Johnson, Mercada, & Acevedo, 2012), familiarity with the topic (Fitzsimons, 1983), writer-reader relationship (Glass, 2007), writing genre (Van Weijen, Van den Bergh, Rijlaarsdam & Sanders, 2009; Woodall, 2002) and awareness of correction (Manchón et al., 2002; Sakontawut, 2003). Because of these factors, L2 writers tend to face more difficulties when composing in L2. Therefore, L2 writers tend to employ L1 (L1 thinking strategy and cognitive language switching) to cope with these difficulties. Because of the L1 use, L1 interference occurs in a composing practice especially in written products, that is, grammar and vocabulary use. Given this point, this study not only explores the writing processes, but also tries to understand whether or not these difficulties can be found in Thai graduate students.

Since L1 is normally employed by L2 writers during the composition, the use of L1 has been investigated for several decades. Although the use of L1 has been viewed as something that influences the writing outcome, it has been viewed differently from one research study to another. In the past, many research studies viewed L1 interference and cognitive language switching as negatively affecting the L2 writing processes (de Larios, Murphy & Manchón, 1999; Kaplan, 1966; Shi, 2012). Later, it was viewed as either facilitating or impeding L2 text production (Cumming, 1989; McLaughlin, 1990; Van Weijen, et al., 2009; Woodall, 2002). On the one hand, it is viewed as a tool to solve task difficulties (Qi, 1998; Zarei & Amiryousefi, 2001); on the other, it is viewed as time-consuming for writing processes (Silva, 1992).

For Thai students, they have often been found to experience difficulties during their writing processes because of writing expertise and writing genre (Bennui, 2008; Thep-ackrapong, 2005; Pongsiriwet, 2001). Therefore, these Thai students tend to employ Thai, as their L1, for conceptualizing ideas and linguistic purposes while composing L2 (English) texts. The use of L1 led to L1 interference which can be detected in the writings. Therefore, the language factors and the purpose of their L1 use will also be examined in this research in order to understand the reasons and advantages (or disadvantages) behind its usage.

Given these points, this study seeks to examine not only the L2 (English) composing processes of Thai graduate students, but also factors influencing them to think in a particular way. Consequently, this study aims to answer these following questions:

1. What are the writing processes of graduate students with higher and lower scores when writing in English?
2. What factors influence the participants' writing performance in each writing process?

Literature Review

Chenoweth and Hayes' (2003) Model of Text Production Process

The model of text production includes four processes: 1) proposing, 2) translating, 3) revising or evaluating, and 4) transcribing (Chenoweth & Hayes, 2003). In order to create a text, working memory (temporary memory resources), long-term memory, or critical reading also need to be activated (Horning & Becker, 2006). This model will be used to examine L2 writing process (see Figure 1) which are the main focus of this present study. Each writing process will be explained as follows:

Proposing Process

According to Chenoweth and Hayes' (2003) model, at the beginning of the text production, the proposer proposes ideas for expression which include goal, content, order, audience, genre, and so forth. This is called an initial package, or an idea package (Galbraith, 2009), which could be in either linguistic or nonlinguistic form. During this process, the writer may have to access some information from memory or an external source to complete the task (Chenoweth & Hayes, 2003; Horning & Becker, 2006). This initial package will then be passed to the translator.

Translating Process

Translating process is a process in which writers put their idea into word strings before the form is evaluated if it is acceptable (Chenoweth & Hayes, 2003). That is, after the translator receives the initial package, they translate ideas into a linguistic form by choosing lexical units, putting them in order, and applying inflection of verbs to make the information consistent (Chenoweth & Hayes, 2003). This process, involves long-term memory, short-term storage, and the articulatory rehearsal or inner voice (Chenoweth & Hayes, 2003). In other words, all the ideas are put together into words with cautious attention by putting them into well-organized linguistic form, a so-called “word string” (p. 113).

Revising or Evaluating Process

The word string or translated package is then passed to the reviser or evaluator to be scrutinized whether or not it is acceptable (Chenoweth & Hayes, 2003). The revising process is considered a procedure for fixing the text problem (Horning & Becker, 2006). Horning and Becker (2006) explained that this revising process occurs when the writers find other information or add “a new dimension or element to their previous texts, prompting them to view the subject or issue in a new light” (p. 113). Moreover, they further advise that knowing when to revise the already written text is necessary, but what steps can be taken in order to improve the documents remain problematic for some students. The evaluator/reviser is able to request other processes to produce another version of the text (Galbraith, 2009) and this can occur several times during the text production and before the text is completely written.

Transcribing Process

After the evaluation/revision process, Chenoweth and Hayes (2003) explained that the package is then sent to the transcriber in which the writer begins to write the text and the production process starts again. This process is called the transcribing process, where the actual text is being written with the selection of the idea packages. When the text is being written, the text can lead back to two stages: proposing and revising process. First, after the writer transcribes (physically writes) the word string into text, the writer is triggered to support the written text with the next segment, or the writer is triggered by the reviser to evaluate the already written text.

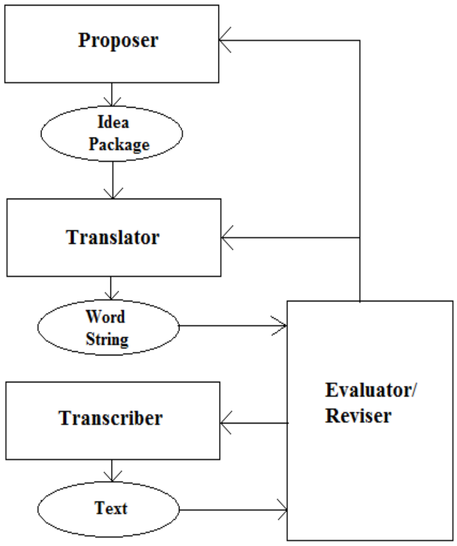

Figure 1. Chenoweth and Hayes' (2003) Model of Text Production Process

Chenoweth and Hayes (2003) developed the text production model revealing that L1 and L2 have the same writing processes which include planning, translating, reviewing and transcribing; but L2 may pause or take more time during the text production. Similarly, according to Khongpun (1992), L2 students, that is, Thai students, have the same writing processes when composing in Thai and English, including planning, transcribing, and revising. However, Thai students tend to revise more often in order to correct grammatical errors, (misspelled) vocabulary, and ideas (Khongpun, 1992; Sakontawut, 2003). Nonetheless, these processes do not take place stage by stage; they are rather "transactional and overlapping" (Zamel, 1982, p. 201).

Factors Influencing Writing Processes

Previous research on L2 writing process indicated that L2 writers follow L1 composing processes including planning/proposing (Sasaki, 2000; Silva, 1992; Storch, 2005), translating (Khungpun, 1992; Storch, 2005; Zamel, 1982), revising/evaluating (Sakontawut, 2003; Uzawa, 1996; Zamel, 1982) and transcribing (Chenoweth & Hayes, 2003). However, according to Leki, Cumming, and Silva (2010), it is suggested that "L2 composing behavior was similar to that of L1 writers in some respects, but language was still a factor that limited performance" (p. 126); therefore, there are some factors influencing the writers' performance in each process. These factors are non-language factors and the language factor. The non-language factors are: 1) writing expertise, 2) writing context, 3) given time, 4) familiarity with the topic, 6) awareness of correction, 7) writer-reader relationship, and 8) writing genre. Also, the language factor influences the writing process. This section will discuss these factors within each of the four processes of text production developed by Chenoweth and Hayes (2003) as presented above.

Non-language Factors

This section discusses the non-language factors that influenced each writing process.

Proposing Process

With regard to planning/proposing process, which includes generating, organizing and goal-setting, L1 and L2 planning patterns were seen as similar (Sasaki, 1994). However, L2 writers tend to spend more time in proposing idea (Zamel, 1982) because the L2 writers require more mental capacity than in L1 planning process (Leki, Cumming, & Silva, 2010). When compared to other L2 English writers, each writer may spend more or less time in the proposing process because of writing expertise, given time, familiarity with the topic, and writing genre.

Writing Expertise

Sasaki (2000) found that higher L2 skilled writers spent more time planning in overall organization than less skilled writers. Even though L2 writers usually follow traditional academic organization, including topic sentence, supporting detail, and conclusion (Sevgi, 2016), they devote their attention to drafting the overall structure and finding appropriate words, which restrain their concentration from generating complex ideas, and extending their writing plan (Berman, 1994; de Larios et al., 1999). Moreover, Cumming (1989) found that writing performances differ according to L1 writing expertise and types of the designed tasks (Cumming, 1989).

Given Time

Another factor that that affects the composition is the time given. That is, the planning time given to lower proficiency L2 learners has an effect on fluency and lexical complexity. For example, Ong and Zhang (2010) found that the no time condition leads to a higher score when compared to planning before writing. This result is contrary to a study conducted by Johnson et al. (2012) which found that given time for planning before writing does not affect grammatical or lexical complexity of L2 writers.

Familiarity with the Topic

The familiarity of the L2 writer with the topic is also a factor that makes L2 writers spend more time on this process. That is, the L2 writers take more time on the planning or proposing process if the writers are unfamiliar with the topic. According to Ong (2014), topic significantly affects the frequencies of generating new ideas and organizing overall content. Similarly, Fitzsimons (1983) found that topic directly affects the planning or proposing processes because the writers take more time to decide how to begin writing when the topic is unfamiliar.

Writing Genre

The last factor is the writing genre. Most tasks require participants to write a text in paragraph or essay form in a particular genre (Van Weijen et al., 2009; Woodall, 2002), such as a personal letter and a persuasive essay (Woodall, 2002), and a short argumentative essay for a contest (Van Weijen et al., 2009). Thus, the results appear to be questionable since it depends on second-language writer's proficiency, topic knowledge (Krapels, 1990; Woodall, 2002) and writing genre. For example, Ka-kan-dee and Kaur's (2014) participants indicated that they do not know how to compose an argumentative essay because they do not know the structure. Therefore, it is difficult for them to organize the structure.

Translating Process

The translating process normally involves the act of translating their ideas into written form. While L1 writers go through the act of putting their thoughts directly into their writing, L2 writers need to translate from L1 into L2 because most L2 writers think in their native language before putting down their idea textually into L2 written form. The act of translating from one language to another is seen as a helpful strategy for L2 writers because the writing is more vivid when it comes from translating (Uzawa, 1996). In the translating process, writing expertise and writing context can lead to different writing processes when comparing L1 with L2 composition.

Writing Expertise

The first aspect to be discussed is writing expertise. Sasaki (2004) found that less L2 skilled writers often stop writing to translate their ideas (in L1) into English; whereas more skilled L2 writers stopped to refine English expression (Sasaki, 2000). Also, Zamel (1982) found that some students write the entire paper in their L1 before translating directly into L2 because it is easier for them to translate than compose in L2. For example, one graduate student in Zamel's (1982) study expressed that she can create more thoughts and ideas into the text when she composed in L1, and if she has to compose her writing in L2, she may feel nervous when she lacks some vocabulary.

Writing Context

The last aspect to be discussed is writing context. One study found the differences between writers in ESL and EFL contexts. According to Sasaki (2004), a longitudinal study revealed that most ESL writers did not rely on translation from their L1 into L2 because they were more experienced and confident in writing, so they tend to focus more on the content. By contrast, EFL writers are more likely to rely on translation because their vocabulary is limited and they are not concerned with content (Sasaki, 2004). Briefly, writers from different contexts, that is, ESL and EFL, might have different writing focuses, especially in terms of vocabulary and content.

In sum, for L2 writers, the translating process does not only involve the act of transcribing their ideas into written form, but it also involves the act of translating from L1 to L2 if they have an L1 thinking strategy. That is to say, less skilled L2 writers may pause or stop during the composition to translate their thought into L2. Therefore, this L1 interference could affect the target language due to the translation. In addition to writing expertise and L1 interference, the writing context can lead to different translating process as well. That is, unlike EFL writers, most ESL writers do not rely on translation.

Evaluating or Revising Process

In the revising process, Zamel (1982) indicated that revising was done throughout the composition, including drafting, between-essay changes, and after the ideas are transcribed. Generally, both L1 and L2 writers revise their texts in order to refine and enhance the quality of the writing (Horning & Becker, 2006). However, the amount of revision is different from one writer to another depending on their awareness of correction (Manchón et al., 2000; Sakontawut, 2003), and writer-reader relationship (Glass, 2007), especially for Thai students.

Awareness of Correction

Previous research studies have discovered that different writers may or may not revise their writing depending on their judgments. According to Khongpun (1992), Thai students go through the same writing processes when composing in Thai and English including planning, transcribing, and revising. However, Khongpun (1992) and Sakontawut (2003) found that Thai students generally revise their L2 writing many times for different reasons because of their awareness of correction, such as revising grammatical and lexical errors due to L1 interference. Moreover, revising is considered difficult because they have to avoid redundancy and use unfamiliar words. Therefore, some Thai writers prefer using Thai first and translate it into English, whereas others avoid using their native language because they were concerned if the L1 interference would affect the content (Khongpun, 1992).

According to Sakontawut (2003), Thai high school students are aware that revising ideas was the most important feature of this process; revising grammar was secondary; and revising vocabulary, punctuation, and spelling were not considered as important. The main reason why Thai students revise the text while composing is because they are concerned with inconsistent ideas with the previous information. The researcher further stated that the amount of revising process for Thai students was rated high because they could not finish their first draft in which they aim to organize or reorganize their ideas.

The reasons why Thai students revise are similar to most ESL writers, which Horning and Becker (2006) attributed to the four aspects of revision. In accordance with the first aspect which is the revision for correction (Horning & Becker, 2006), Zamel (1982) found that ESL writers tend to make changes at lexical and syntactical levels of their drafts, whereas they made some changes at the structure level more frequently as they progressed closer to the final product.

Unlike Thai writers, Uzawa (1996) discovered that in the L2 revising process, most Japanese students did not reread their texts after finishing writing in English. Those who reread were likely to be rigid in reviewing because they correct only minor points and seldom revised beyond the word level; also, those who found grammatical mistakes did not correct them since they did not know what should be edited. Moreover, in a study conducted by Manchón et al. (2000), the Spanish participants had different behaviors when rescanning the written text. They suggested that these different behaviors were related to the writer's dominant language and another variable that could be the subject of future research.

The results mentioned above are somewhat different from Sze (2002) who found that high school Chinese L2 writers do not see a revising process as an important strategy unless they were required to do so. Therefore, it could be assumed that different L2 writers may have different awareness of correction depending on their judgments.

Writer-reader Relationship

The writer-reader relationship can also affect cognitive processes and writing outcomes. A study conducted by Glass (2007) found that most Thai participants have written in English since they were students for Thai readers such as teachers, friends, co-workers, and employers rather than other nationalities. Some of them reported feeling that they were more grammatically relaxed when composing English texts for other L2 users because they were likely to make the same mistakes and could understand their intended meaning (Glass, 2007).

In sum, the revising process can occur at any point of composing when the L2 English writers reread for new ideas, or it could happen when the writer is stimulated by an evaluation of the grammatical or lexical errors (Hayes & Flower, 1980; Hayes, 2012; Kellogg, 2006; Manchón et al., 2000). However, L1 interference could affect the content of L2 writing for Thai students. Therefore, they often spend time revising their written texts in order to correct some defects, including inconsistent ideas and incompatible segments, such as grammatical and lexical usage. Moreover, the amount of revision might vary depending on the writer-reader relationship.

Transcribing Process

Lastly, both L1 and L2 writers have to similarly go through the transcribing process in which the text is physically written (Chenoweth & Hayes, 2003). That is, when the text is being written, it can lead back to two stages: proposing process and revising process. First, after the writer transcribed (physically wrote) the word string into text, the writer is triggered to support the written text with the next segment. Or, the writer is triggered by the reviser to evaluate the already written text (Chenoweth & Hayes, 2003).

Language Factor

Writers sometimes employ L1 as a natural specific behavior of L2 writers (Zarei & Amiryousefi, 2011) to counter the difficulties mentioned in the previous section. Therefore, some L1 interference has appeared as the outcome. This behavior leads to slight difference in the L1 and L2 writing and thinking, not the processes. That is, the use of L1 may influence the way L2 writer thinks; therefore, it influences the L2 writing. Two factors that make L1 and L2 different in terms of writing and thinking are the use of L1 and cognitive language switching that arise during composition. This section will review L1 thinking strategy, and L1 linguistic interference.

L1 Thinking Strategy

Wang and Wen (2002) stated that writers tend to use their L1 when writing in L2 to conceptualize their ideas rather than emphasize the linguistic process because conceptual activities require more cognitive strategies to help the writers fulfill the demand of text production (Kellogg, 1994; 2006). Similarly, Van Weijen et al. (2009) found that every participant in their study occasionally used their L1 thinking strategy to organize their ideas while writing in L2. This strategy was suggested in connection with L2 proficiency, that is, less skilled L2 writers tend to revert to their L1 when experiencing cognitive overload or when doing an advanced task. However, Khongpun (1992) found that writing in L1 first might help the writer compose better English writing only if the writer’s translating ability is skillful.

The perception toward writing expertise and the amount of L1 use during L2 composition is still debatable in the L2 writing field. Wang and Wen (2002) found that L2 writers with more L2 expertise employ less L1 while composing texts. To put it differently, L2 writers who use L1 while composing L2 writing could be viewed as less skilled writers. However, some recent research has indicated that using L1 could benefit L2 writing processes. For example, Woodall (2002) considered it as a tool to facilitate the writing tasks as it can cope with cognitive overload (Woodall, 2002) and sustain the writing process (Cumming, 1989).

Briefly, it is clear that most L2 writers employ L1 during the composition processes. However, the perception toward writing expertise and the amount of L1 use is still unclear. That is, on the one hand, the use of L1 is considered related to less L2 skilled writers because they experience cognitive overload. On the other hand, the use of L1 is an assisting tool for L2 writers to facilitate the writing tasks.

Linguistic Interference

Kaplan (1966) explained that each language and culture has a unique rhetorical convention such as how and where to present main ideas, how to organize information, and how to express thoughts and feelings in writing convention. Therefore, this convention also plays a role when composing L2 texts because the extent of writing does not only involve using a different language, but also applying different linguistic conventions which implies different ways of thinking (Galbraith, 2009). However, different L2 writers may have different L1 interference depending on their L1. Thus, this section will provide one example on Chinese L2 writers and other examples on Thai L2 writers.

As mentioned above, when composing in L2, writers need to be accustomed to the writing convention. However, some L2 writers might find it difficult to do so because L2 writers have to adapt to the L2 discursive conventions. This is because writing not only involves the linguistic convention, but also the L2 discourse as well. Kim and Lim (2015) found that the main problem with L2 learners is that they are not only learning a second language, but also new cultures. Thus, the participants find themselves between their own language and the new cultures and the new pattern of their target language (Kim & Lim, 2015). Therefore, some linguistic features can be reflected in L2 writing, such as the use of modal verbs in Chinese L2 writers (Kim & Lim, 2015; Yang, 2013).

For example, one study shows that Chinese writers used more modal verbs to express their strong personal opinions such as “can” and “could” because they are taught to be rigorous when making claims. The study pointed out that changes in modals in L2 speakers might indicate different degrees of hedges. That is, Chinese writers interchange “will” and “would” because they use the same lexicon in Chinese. Whereas, for L1 English speakers, “will” conveys a much surer prediction than “would” when using it in the same context (Yang, 2013).

Similar to Chinese students, Thai students also find it difficult to adapt to the English writing convention. Although English is a required subject in the entrance examination at different educational levels from primary to tertiary levels and it plays a significant role in Thai education since it is a compulsory or an elective subject (Bennui, 2008; Nomnian, 2013; Wiriyachitra, 2002), Thai students still use the Thai language to mediate their cognitive process while writing, thus, making it difficult for Thai students to think in English while composing L2 (English) writing (Bennui, 2008). Consequently, L1 interference occurs broadly in their writing processes, especially the use of L1 while carrying out conceptual activities (Zarei & Amiryousefi, 2011). Therefore, some characteristics appear in the L2 writing.

The first characteristic is L1 lexical interference which occurs when writers who have words form in L1 might not have the same access to L2 (de Larios et al., 1999) so they tend to restate L1 into L2 vaguely. For example, Shi (2012) found that L2 writers tend to paraphrase the source text roughly when restating L1 original information into their L2 because the writers may not understand the original text profoundly in terms of language and content.

Another case in point is found in translation work. That is, Thai students or writers tend to translate (cross-linguistic change) some words directly. This direct translation of Thai words into English could affect the meaning of the text because the translated words do not belong in the sentence. According to Bennui (2008), incorrect vocabulary use due to L1 lexical interference directly affects the text meaning. That is, Thai students violate some collocation restriction when composing text in English. For instance, they compose a sentence "I play computer" instead of "I work on the computer," and "I close the radio" instead of "I turned off the radio" (Thep-Ackrapapong, 2005) as they translated directly from their L1. Moreover, Thai students' vocabulary seems to be limited, thus it is suggested that a dictionary should be allowed in writing tasks. From this it can be assumed that students were not familiar with writing prompts so they could not fulfill the task as expected; therefore, a dictionary should be allowed while L2 students compose their writing tasks.

Another problem of L1 lexical interference in translation is that the writer cannot cover all the content they need because the translation deviates wording (Khongpun, 1992). One Thai high school student indicated that when s/he composes an English writing, the major problem is translating words from Thai into English in which s/he could not cover all the information and content that needed to be written (Khongpun, 1992). For example, a phrase "สวมหน้ากากเข้าหากัน" ("wearing masks facing each other"), which means to pretend to be nice to each other, is difficult to express in English. Therefore, for Thai students, L1 lexical interference definitely takes times to recall and think when one wants to compose in L2 (Khongpun, 1992).

Besides the lexical interference, syntactic interference is also a problem for Thai students. That is, the grammatical structure is one of the most difficult aspects when composing an L2 (English) essay, especially in an argumentative essay (Ka-kan-dee & Kaur, 2014). Thus, grammar seems to obstruct the way they express their opinions. Pongsiriwet (2001) and Thep-Akrapong (2005) found that the use of subject and verb agreement, verb formation, and tense is problematic for Thai students because the grammatical errors in written English are influenced by Thai sentence structures. That is, some verb tenses are nonexistent in the Thai language (Bennui, 2008). Similarly, Angwatanakul (1975) found that Thai students' most frequent errors in English composition are grammatical errors. The author indicates that the most frequent errors in writing are verb forms; while tense, articles, nouns and preposition appear every once in a while.

The last characteristic of L1 interference is at the discourse level which could influence the text meaning or quality of the text. Specifically, Thai writers cannot differentiate the writing styles between Thai and English writing. According to Ka-Kan-dee and Kaur (2014), Thai students find L1 English essay patterns difficult to follow. For instance, Thai students tend to start writing by asking questions and answering them (Thep-Ackrapong, 2005). This style of writing makes English-native readers confused about the point the writers are trying to make. To be specific, Thai students would answer the question in the beginning of the text. Also, they tend to state the writing purpose of writing in the conclusion; whereas English readers would expect to read the purpose at the beginning of the text. Moreover, in the conclusion, Thai students tend to show more repetition, which is due to the statements in Thai writing (Grabe & Kaplan, 2014). That is, they repeat all of what has already been discussed in the conclusion part. This implies that if the students understand the writing pattern, the organization of the essay would not be a barrier for them to produce a good piece of writing.

Another aspect of L1 discourse interference lies in the narrative component. For instance, Indrasuta (1988) explained that when Thai students wrote in L2 (English), they use their L1 rhetorical style in which they put moral themes and moral values into narrative writing. That is to say, Thai L2 writers follow a Thai rather than a Western narrative model (Indrasuta, 1988). In another study, Bennui (2008) pointed out that the contrastive rhetoric of Thai students, minoring in English, has a positive view of L1 discourse interference, especially when writing supporting details. For example, Thai students expressed their values and thought patterns specific to Thai culture by using Thai proverbs in their English content (Bennui, 2008).

Based on this discussion, lexical, syntactic, and discourse interferences generally influence the writing outcomes in terms of content and organization of writing. Consequently, it might be difficult for L2 writers to adapt their writing processes to the unaccustomed writing styles. Therefore, in many cases, if they are allowed to use a dictionary, and given the exact instruction on essay organization, they should be able to produce a good essay.

Research Methodology

Participants

This present study collects data from six Thai learners of English studying in an international program. The participants are graduate students from the Graduate School of Language and Communication (GSLC), National Institute of Development Administration (NIDA) in Thailand. The criteria for selecting these participants are that they have attained at least a B grade from English academic writing classes at GSLC to ensure that they can compose the writing task within a specified time frame. The reason behind the selection of university level is that being a graduate student with previous experience in academic writing is an indicator of writing proficiency. The participants' English proficiency levels are different according to their grades from academic writing classes. They will be categorized as higher or lower proficiency according to their writing performance which will be scored (rated from 49-100 score) by two English native teachers/professors.

Data Collection

For data collection, the main data sources were from a writing task, audio-recorded data, and interview data from semi-structured interviews. The procedures were as follows:

1) The participants were asked if they are interested in smartphones or not because it is the topic of the writing task. If they are, they will be selected for the study.

2) The participants were given instruction on how to complete the argumentative essay task. In the instruction, participants were told how to verbalize their thoughts while they were writing. A writing task was used to demonstrate this, e.g., another writing topic: "Do you agree or disagree that social network makes us stay connected but neglect the real world?" Moreover, the researcher briefly explained the four writing processes. It is important to note that the participants could freely switch between L1 and L2 throughout the composing processes since the use of L1 and cognitive language switching behaviors can be used to determine whether or not they influence writing processes and writing outcomes.

3) They were given a writing topic and asked to finish the writing task within 45 minutes. The participants were allowed to use a print dictionary during the composition because their ideas should not be paused or interrupted by limited vocabulary. Also, the participants were asked to complete the writing task in a controlled setting where there are only the participant and the researcher, thus they could not access outside sources, such as the Internet or other people. This is because it would "reduce the effect of uncontrolled variables and ensure the internal validity of the study" (Polio, 2011, p. 151).

4) During the composition processes, the participants were audio-recorded for further analysis. In order to do so, the participants were asked to think aloud about what was going on in their mind whether or not it related to the writing topic.

5) After collecting the writing task, the researcher asked two English native teachers or professors to grade the English writing to score the written paper. The two English native teachers or professors are from well-known universities in Thailand. The "ESL Composition Profile" scoring rubric (Jacob, Zinkgraf, Wormuth, Hartfiel, & Hughey, 1981) was used as a guide for scoring the content, language use, vocabulary, organization, and mechanics (mastery of spelling, punctuation, and capitalization) with a

total of 100 score. As such, the researcher was able to label the participants according to performance levels for further analysis.

6) After the writing task and think-aloud protocol, an interview with open-ended questions adapted from Khongpun (1992), was carried out immediately before the participants forgot their writing experience. The reason for the semi-structured interview was that it allowed the researcher to go into detail when needed. Also, it ensured that the participants fully understood the questions so the researcher could gather a substantial body of information. Therefore, the semi-structured interview was selected as a research instrument to allow the researcher to examine why they spend more or less time in a particular process (proposing, translating, evaluating, and transcribing); and why they use L1 when composing L2 writing. It was noted that all answers from the semi-structured interview were listed in order to categorize the purposes of the L1 use.

Coding Schemes and Data Analysis

All the data was transcribed by the researcher. The think-aloud data was divided into sentences according to the written paper. The gathered information of the English composing processes was later categorized into four steps in accordance with Chenoweth and Hayes' (2003) model of text production, which includes proposing, translating, revising/evaluating, and transcribing, as shown in the coding scheme in Table 1. Please note that one sentence can be categorized in more than one process because each process may occur recursively.

Then, the definition or meaning of the think-aloud and transcribed texts was interpreted by the researchers in order to compare the similarities and differences between L1 and L2 writing processes with Chenoweth and Hayes' (2003) model of text production. The coding categories were adapted from Sasaki's (2000) encoded categories model. Later, the percentage of the writing processes in the coding scheme was calculated in order to compare the frequencies of each process. Thus, the researchers could analyze the relationship between the amount of the employed processes and the writing scores.

Furthermore, each occurrence of the use of L1 or L2 was noted in order to discover its frequency and why each participant decided to use L1 or L2 in the task given. If the participants used L1 (Thai) to emphasize overall concepts other than language use, it was placed in conceptual activities. If the participants used L1 to focus on the language itself, it was placed in linguistic activities.

Moreover, the percentage of Thai words involved in each category of the writing processes was obtained, that is, the number of Thai words in a particular type of process was divided by the total number of words in this type of process (Wang & Wen, 2002). Therefore, the researchers could discover whether or not it facilitates or impedes the text production when comparing the amount of L1 use to the writing scores.

After the writing and audio-recorded data were gathered, all the think-aloud data were placed into a table with their meaning, the use of L1/L2 and the activities that L1/L2 was used for the analysis. For the interview data, it was recorded to analyze the relationship between writing experience (from the interviews) and the writing outcome (from the writing task).

Findings and Discussion

The results will be discussed based on the two research questions.

RQ1: What are the writing processes of graduate students with higher and lower scores when writing in English?

The results confirm that all participants followed Chenoweth and Hayes' (2003) model of composing processes in English composition. Their writing processes, consisting of proposing, translating, evaluating/revising, and transcribing, operated simultaneously which were the same as English adults writers. However, they went through each process differently, which can be discussed according to their writing proficiency levels, that is, higher and lower-skilled writers.

Writing Processes of Writers with Different Writing Proficiency Levels

This section would therefore focus on comparing two groups according to the writing scores: higher-skilled writers (Participant E and F) and lower-skilled writers (Participant A, B, C, and D). Also, this section will be discussed according to the three processes.

Proposing Process

In the proposing process, the findings show that all participants employed it for proposing an idea that was not related to previous ideas and generating an idea related to earlier sentences. However, some participants employed it for other reasons. For example, according to the data analysis, Participant C and E employed the proposing process for five reasons; whereas other participants employed it for two to four reasons (see Table 1). This might be why their writing scores were rated differently.

Participant E and F's writing were rated good to average. In this study, they are referred to as higher-skilled writers. Even though these two participants' writing have been rated at the same level, they did not entirely employ the four processes similarly. In the proposing process, Participant E and F generated an idea that was not related to previous ideas and which was related to previous sentences. They were able to propose facts and viewpoints based on their experience. Therefore, in terms of content, two raters commented that they showed good background knowledge related to the topic. In terms of organization, there are three other elements that Participant E did in the proposing process, but Participant F did not. That is, Participant E employed the proposing process for planning overall organization, what to write next, as well as the conclusion. Thus, the raters rated Participant E's organization higher than Participant F's. The former's writing was better organized with good logical sequencing due to the three planning stages in the proposing process. This could suggest that if Participant F had executed those three stages in the proposing process, his/her organization may have been scored higher.

For the other participants (Participant A, B, C, and D), they also generated an idea that was not related to previous ideas and proposed an idea related to earlier sentences in the same way as the higher-skilled participants. However, according to the raters' comments, their topic sentences were unclear and their arguments were unbalanced. As a result, their contents were rated 56.7% to 68.3%. In terms of organization, they did not plan overall organization. The raters commented that they were loosely organized and the paragraph sequencing was not fluent. However, Participant A and B planned what to write next and the conclusion, while Participant C and D organized their generated ideas; however, the organization was still rated 70% to 77.5%. This may be because well-organized ideas could partly increase the scores. If they had planned for the overall organization, their writing could have been scored higher.

Translating Process

In the translating process, there are three reasons for employing this process, including translating ideas into written form, choosing lexical units, and applying verb form. The finding shows that it is unavoidable for all participants had to translate their ideas into written form. However, only certain participants employed it for the other two reasons.

According to the findings, higher-skilled participants employed the translating process to choose lexical units, but did not apply verb forms to make the grammar consistent. Even though Participant E and F chose lexical units during this process, Participant E received a better score (17 out of 20 or 82.5%) and better comments on vocabulary use. This is because, according to the raters' comments, Participant F's writing had a fair range of words used.

For the lower-skilled participants, all of the participants chose lexical units during this process. However, Participant A and B received lower scores when compared with Participant C and D because, according to the raters, their vocabulary was limited. Besides choosing lexical units, Participant A and D were the only two who conjugate verb forms to make their grammar consistent. Although they have applied the verb forms, their language use was rated lower when comparing to others (Participant B and C), that is, Participant A's language use was rated 52% while Participant D's was rated 60%. This is because there were errors of tense. This means that even though the writers conjugate verb forms, tense-related errors can still appear on the writing.

Evaluating/Revising Process

There are three reasons for using the evaluating/revising process, including scrutinizing word strings, rereading text, and evaluating already written text. The findings show that it is unavoidable for all participants to scrutinize if the word strings sent from the translator was acceptable or not. However, the other two reasons were used with only certain participants.

For higher-skilled participants, Participant E both reread and evaluated the already written text during composition. Thus, they could set the writing goal for the next sentences and check their errors at the same time. This might be the reason why they received a higher score. Unlike Participant E, Participant F, who was ranked in second place, did not employ this process to reread or evaluate the text. However, the rates' comments for both appeared to be similar. That is, there was appropriate word use, proper grammar usage with few errors of tense, and there were occasional errors of spelling. This means, employing the evaluating/revising process for rereading and evaluating cannot guarantee a high score because some writers are able to write well in the first draft, such as with word choices, grammar usage, and spelling.

For lower-skilled participants, Participant D was the only subject who reread the already written text to check grammar. However, they committed frequent errors of tense and word order as did other participants. This means simply rereading for grammatical mistakes might not increase the writing scores.

To conclude, in this study, in order to achieve a higher score in writing, participants may not have to employ each process for every reason. As can be seen from the case of Participant E and F who were rated as higher-skilled, they did not employ each process for all its functions. However, they still received good scores and comments. Briefly, they provided good logical content, well-structured essay organization, appropriate word choices, correct language use, and correct mechanics.

RQ2: What factors influence the participants' writing performance in each writing process?

According to the coding scheme and data analysis, all participant employed every writing process in different functions in relation to Chenoweth and Hayes' (2003), and Horning and Becker's (2006) study. The finding showed that there are two main factors, that is, non-language and language factors, influencing participants' writing performance in each process.

Factors Influencing Each Process

These factors can be divided into two categories: non-language factors and language factors. However, these two categories will be discussed in the different aspects. That is, the non-language factor will be discussed according to the writing processes; whereas the language factors will be discussed as a facilitating and an interfering factor. In addition to these two factors, the relationship between experience on academic writing and the writing outcome will be discussed at the end of this section.

Non-language Factors

Based on the interviews, there are five non-language factors: 1) time, 2) familiarity with topic, 3) writing genre, 4) linguistic translation, and 5) writer-reader relationship, which influenced the writing processes. This section will divide the discussion according to the writing processes. Please note that each factor influenced only some processes.

Proposing Process

In the proposing process, the data has shown that time, familiarity, and writing genre were the factors that influenced participants' writing performance in the proposing process.

According to the interview and writing scores, time constraints were found to be the main reason for lower scores because participants had insufficient time in the proposing process. That is, if they had been given more than 45 minutes, some participants would have spent it on planning and organizing, as revealed in Participant C and D's interviews and by their writing scores. In the case of Participant C, they were worried that they would run out of time before finishing the paper, so proposed new ideas as soon as they finished the previous sentences instead of doing other activities, such as planning overall organization, and planning for the audience. Therefore, their content was rated 17 out of 30 (56.7%) and organization was rated 15.5 out of 20 (77.5%). Similarly, Participant D completed the task as if it was their first draft because of limited time. They stated that if more time had been provided, they would have spent it on rearranging content and organization. Their content was rated 20.5 out of 30 (68.3%) and organization was rated 15.5 out of 20 (77.5%). According to the raters' comments, both participants' content was reviewed that there was only some background knowledge related to the subject presented; however, the linking of ideas was not clear, and the writing was loosely organized. That is to say, if the participants had been provided with more time, they would have spent it on proposing content and organization, which may lead to better writing quality and hence higher scores. This confirms Ong and Zhang's (2010) results that the time condition leads to a higher score, especially in the content and organization parts.

Another factor that influenced the proposing process was familiarity with the topic. Some participants proposed faster than others because they were more familiar with the topic. That is, Participants A and F found the topic easy because they were familiar with smartphones. Therefore, they did not experience any difficulties when proposing ideas. For example, according to the interview, Participant A admitted that she had ideas in full sentences along with an organization before translating and transcribing into the text because the topic was easy. In contrast to Participant A and F, Participant C explained that the topic was difficult and challenging, so they would like to plan more than they had done.

In addition to time and familiarity, the writing genre was another factor which influenced participants' writing performance. Since every writing genre is varied depending on the writing form and its purpose, the participants may find some writing genres easier or harder than the others. In this study, the argumentative essay was chosen to be the writing task; thus, some participants found it quite challenging to complete. For example, Participant C and D reviewed that there were various possible ways to answer, so it was difficult to clearly organize ideas. Therefore, both participants' organization was rated 15.5 (77.5%) because their writing was loosely organized. The result was congruent with Ka-kan-dee and Kaur's (2014) findings which showed that the argumentative essay's structure could be difficult to organize if participants were not skilled with this writing genre.

Translating Process

The factor involved in the translating process is the act of translating ideas into written form. In so doing, some participants mostly relied on the linguistic (L1-L2) translation to facilitate their writing while others formed ideas in L2 and produced sentences straight into L2. This linguistic translation will be further discussed in the next section.

Evaluating or Revising Process

In the evaluating/revising process, the findings from the interviews show that the time factor and writer-reader relationship influenced participants' writing performance in the evaluating/revising process. With regard to time factor, some participants explained that they would have spent time on revising if there had been more time provided. Some participants indicated they would like to revise for different reasons, including content, organization, grammar, and spelling. In the case of Participant D, they said they normally revise content after finishing the first draft. However, 45 minutes was limited, so they could not revise their content. Therefore, their content was rated 20.5 out of 30 (68.3%) because there was only some knowledge related to the topic presented. Similarly, Participant F normally revises content and organization one or two days after finishing their first draft. Their content was rated 23.5 out of 30 (78.3%), and organization was rated 13.5 out of 20 (67.5%), but they believe that they could have been rated higher than this if they had had more time. In addition to Participant D and F, Participant E also said that they would like to revise for grammar and vocabulary. However, they did not do so because they ran out of time, but their language use was rated 22 out of 25 (88%), and vocabulary was rated 4 out of 5 (80%). This shows that having more time to evaluate/revise the writing may increase the score, but some participants might have done great writing on their first drafts.

In addition to the time factor, the writer-reader relationship also influenced one participant's writing performance. That is, Participant A rarely evaluated or revised their writing because of their friendly relationship with the researcher. According to the interview, they said that the researcher would understand the intention of the message they were trying to convey even if the grammar was incorrect. Therefore, when they finished writing, they did not evaluate nor revise the text, although they knew there were some grammatical mistakes. As a result, their language use was rated 13 out of 25 (52%) because there was some misuse of prepositions, articles, and capitalization. This means that if the participant had evaluated/revised their draft, their language use could have been rated higher. The finding is therefore congruent with Glass's (2007) study that if the writers have a close relationship with readers, they tend to be grammatically relaxed.

To conclude, the time factor was one of the factors that influenced the amount of proposing and evaluating/revising processes because most participants would like to propose and evaluate/revise more if there was no time constraint. Another factor was familiarity. That is, when participants were familiar with the topic, they tended to propose fluently. Next, some writing genres could be more challenging than others. In this study, the participants found the argumentative essay to be quite challenging. Besides time, familiarity, and writing genre, the linguistic translation was found to facilitate the translating process. Last, friendly writer-reader relationship may make the writers less aware of grammatical mistakes. Briefly, the time factor was the most influencing factor that impeded participants' evaluating/revising process. Without the time constraints, some participants may have received higher scores because they would have done more proposing and evaluating/revising. However, the familiarity factor facilitated participants' proposing process the most because they can propose ideas fluently.

Table 1. Influencing Factors on Each Process

Influencing Factors	Affected Process
1. Familiarity with topic	Facilitated **proposing process**

2. **Time constraints**	Obstructed **proposing process** and **evaluating/revising process**
3. **Writing genre (argumentative essay)**	Challenged **proposing process**
4. **Linguistic translation**	Facilitated **translating process**
5. **Friendly writer-reader relationship**	Impeded **evaluating/revising process**

Language Factors (L1 Use)

The results show that mentally using more or less L1 while writing did not obstruct all the participants' writing process because it flowed continuously. However, it could influence the writing outcome in terms of the writing convention as can be seen in the case of Participant E.

Based on the data analysis, Participant E was one of the participants who cognitively employed L1 more than L2 while writing. Therefore, according to the interview, Participant E explained that they composed every English writing task the same way as in Thai. That is, their essay always consists of three paragraphs: introduction, body, and conclusion. Their content is well organized beforehand because they have been taught to do so in Thai writing. Also, they always ends their essay with a proverb in Thai writing, thus they did the same thing when composing English writing. This confirms Galbraith's (2009) study that L1 writing convention plays a role when composing in L2. Moreover, it is congruent with Bennui's (2008) study that Thai students expressed their Thai culture by using Thai proverbs in English content.

Briefly, employing L1 while writing in L2 can influence writing outcome in terms of discourse interference. Thai is, when the participant mentally used Thai while writing the essay, they put moral themes in the writing due to Thai rhetorical style.

Conclusion

This study offers a better understanding of Thai graduate students' writing processes and the use of L1 during composition. In terms of writing processes, the most significant finding is that most participants mentally followed Chenoweth and Hayes' (2003) model which consists of proposing, translating, evaluating/revising, and transcribing recursively. Based on the results, five non-language factors increased or limited the amount of each process. Familiarity with the topic helped participants propose and organize ideas faster; while linguistic translation also helped in the translating process because participants were able to translate ideas into written form easily. Differently, writing genre limited a participant's proposing process since it was challenging their writing ability in generating ideas on this topic.

Additionally, the friendly writer-reader relationship reduced the amount of evaluating/revising process. Last, the time constraints obstructed both proposing and evaluating/revising process. Even though the use of each process did not entail high scores, it is still unavoidable to go through these processes while writing.

In addition to the factor influencing each process, some aspects needed to be aware of while writing. In order to achieve good scores and comments, writers may not need to employ all functions of each process. However, during the proposing process, writers should remind themselves to provide good content and essay organization in order to increase the writing score. In the transcribing process, writers may need to be careful when conjugating verb forms, tenses, and other grammar errors. Moreover, even though the findings show that reliance on the evaluating/revising process could not guarantee a higher score, for those unable to write well in the first draft, evaluating/revising would partly increase writing scores in vocabulary, language use, and mechanics.

The other aspect is L1 influence. During the writing process, all participants mentally used L1 while writing. According to the interview, all participants agreed that mentally using L1 helped them complete the writing in both conceptual and linguistic activities. Even though the finding indicated that this facilitated the writing process, it interfered with writing outcomes, especially in syntactic and lexical use. This suggests that using L1 may lighten the participants' cognitive load; however, they should be aware of some linguistic interference that can lower their writing quality.

Recommendations

The research recommendations are as follows:

First, researchers should consider pre-writing and post-writing stage to observe if there are more processes at work. Questions worth being investigated would include: 1) what are the writing processes during the pre-writing stage?; and 2) what are the writing processes during the post-writing stage?

Second, more time should be provided for participants to complete the tasks thoroughly. Based on the interviews, one hour would be enough for them to cover all aspect they want to revise.

Third, a larger number of participants, and participants at other educational levels as well as participants from other contexts should be examined. Questions that should be included could be, for example, "What are the writing processes of high school students in ESL context?"

Last, further research could focus on other writing genres, which could shed some lights on the writing processes and writing performance when dealing with different types of writing.

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A Prototype of English Metaphorical Expression of Emotions Used by Thai Undergraduate Students

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Abstract

This study aimed to find English prototype metaphorical expressions of the primary emotions proposed by Parrott (2001). One-hundred respondents (50 English major students and 50 non-English major students) were asked to give one metaphorical expression for each of six emotions. After that, the metaphorical expressions repeatedly given were contained in five-scale GOE rating questionnaires. The GOE rating questionnaires were distributed to 500 university students to identify the prototype of six emotions' metaphorical expressions. The results were: [LOVE IS SONG], [JOY IS FUEL], [SURPRISE IS MAZE], [ANGER IS FIRE], [SADNESS IS DARKNESS], and [FEAR IS WEAKNESS].

Keywords: metaphorical expression, emotion, prototype

Introduction

In 1975, Eleanor Rosch and her team carried out an experiment surveying the best example of three categories, that is, bird, vegetable, and tool. The participants were her psychology students. The experiment is now well-known as the origin of prototype theory. The point is, her experiment had an enormous impact on many fields including cognitive semantics. Prototypicality is very useful for categorizing concrete things. However, Evans (2000) and Wierzbicka (1990) argued that it is still unclear whether prototype should also be useful for categorizing abstract nouns, relations and process, for instance. To avoid the argument, Herskovits (1986) used the term "ideal" instead of prototype in her study. In Linguistics, since there are many words used in daily life sharing nearly the same meaning, linguists have tried using prototype theory to identify what word is the prototype of the words sharing the common meaning. In addition, in the experiment carried out by Rosch, the observed data were concrete nouns. There is still some room left to carry out the experiment on abstract nouns. Metaphor used in language, an interesting topic, should be analyzed using prototype theory. The problem is what kind of metaphor and where the data should be analyzed.

Humans are born with emotions. From the first time a child opens its eyes, it cries, maybe because it is surprised, angry, or afraid. Even as the child grows up to be a little kid, emotions remain. For example, the kid may say "I love you, mum." "I'm sad, my toy is broken." However, when that person grows into an adult, the expressions used change, maybe "You are my star, honey." Lakoff and Johnson

(1980) claimed this phenomenon is metaphorical and insisted that non-literal meanings are used in everyday life in their book *Metaphors we Live By*. Furthermore, they claimed that metaphor was composed to serve three different purposes of usage: to simplify a complicated message, to express an opinion in a more compact way, and to express a vivid idea (Fainsilber & Ortony, 1987). When considering both emotion and metaphor, we see that both are with us every day. Since emotion is a part of everyday life for humans, metaphorical expression can be used to represent the feeling we are concerned with. This argument extends the propositions of Davitz (1969) and Davitz and Mattis (1964) that emotional terms are described through the use of metaphorical expression since a purely literal meaning cannot deliver some subjective thoughts to receivers while a metaphor can generate the imagery of particular expressions (Davitz, 1969; Davitz & Mattis, 1964). Collecting data from novels is one good way, but in our view, the results would reflect an individual or merely a group of authors. In this study, the data were collected from non-native English speakers studying at university to see how they used a metaphorical expression when talking about a set of emotions.

Research questions

1. What are the metaphorical expressions used for referring to emotions by undergraduate students?
2. Can they be categorized into superordinate, basic, and subordinate levels? If yes, in which basic level is each metaphorical expression categorized?
3. What are the prototype metaphorical expressions of the six emotions?

Literature Review

Metaphor

Words can have both denotative meaning and metaphorical meaning. Ullman (1962, pp. 162-163) claimed that figurative meaning comprises two elements: tenor and vehicle. For example, a swan is a kind of bird, but when we say “She is like a swan,” this does not mean she is really a swan, but it means she is polite and has a good manner. Here, “she” is a tenor and “swan” is a vehicle. Nida (1975, p. 126) further claimed that metaphorical meaning is used to expand meaning and makes up the relationship between the base meaning and figurative meaning of the different semantics domain. Lakoff and Johnson (1980) proposed that non-literal meanings are used in everyday life, indicating that non-literal meaning is as frequently used and important as literal meaning. They explained that a conceptual metaphor is used as a tool for humans to understand one conceptual domain in terms of another. Forceville (2006) stated that we use metaphor to comprehend abstract and complicated concepts in terms of a simpler one, so that a speaker often uses a concrete, tangible or less complex concept to understand an abstract, intangible or complex concept. Kovecses (2010, p. 4) explained a conceptual metaphor by proposing a convenient shorthand to the view of metaphor as “CONCEPTUAL DOMAIN A IS CONCEPTUAL DOMAIN B”. Thus, this is about mapping two domains in the mind. These two domains are composed of “source domain” and “target domain.” The source domain is used to comprehend the target domain. See some examples below.

Target	→	Source
LIFE	is	JOURNEY.
ARGUMENT	is	WAR.

Many scholars have studied metaphorical meaning in language in various contexts. For example, Angkurawaranon (1984) studied the connotative meaning of the word “Phuuying” (woman) in modern Thai songs by using componential analysis. The results showed that there were positive and negative connotative meanings of the word “Phuuying” used in modern Thai songs, depending on the language users being male or female.

Prototype Theory

Prototype theory was originally based on Eleanor Rosch’s experiment (1973; 1978). The concept of prototype theory is that any category comprises many members. However, there is only one member that can be the best example which we consider as the “prototype.” The rest of the members can only be considered if they sufficiently resemble the prototype. Rosch carried out the experiment using a Goodness-of-Exemplar (GOE) Rating. The participants were asked to rate a large number of members, species of bird in this particular case, into categories 1 to 7. The member considered the best exemplar was rated as 1 while the members considered the worst exemplar were rated as 7. The results showed that robin was the best exemplar which was labelled as the prototype of bird. On the other hand, ostrich was the worst exemplar. Cruse (2011, pp. 129-130) also conducted an experiment on exemplar vegetables. He claimed that potato and carrot might be the best exemplar or prototype of vegetables in contrast to lemon which is claimed as the worst exemplar of vegetables.

Apart from a GOE rating, there are cognitive behavior correlations known as prototype effects as shown below.

1. Order of mention – Under time pressure, the member being first mentioned has a high chance of being the prototypical member.
2. Overall frequency – The more frequently mentioned, the greater the chance to be the prototypical member.
3. Order of acquisition – The member known or acquired first tends to be the prototypical member.

4. Vocabulary learning – Learning is easier when the learned topic is derived from the prototypical member.
5. Speed of verification – The more speed used to verify the member, the more chance to be the prototypical member.
6. Priming – The members are accepted more quickly when they are closer to the prototypical member.

Rosch et al. (1976) stated that there is an inclusiveness level used to provide optimum cognitive economy called the basic level. See the example of Rosch et al. (1976) in Table 1.

Table 1. Example of a taxonomy used by Rosch et al. (1976)

Superordinate level	Basic level	Subordinate level
FURNITURE	CHAIR	KITCHEN CHAIR
		LIVING-ROOM CHAIR
	TABLE	KITCHEN TABLE
		DINING-ROOM TABLE
	LAMP	FLOOR LAMP
		DESK LAMP

Source: Rosch et al., 1976 as cited in Evans & Green. 2006, p. 257

A category can be divided into three levels: superordinate level, basic or generic level, and subordinate level. The superordinate level provides less detail, the basic level, situated in the mid-level, provides inclusive details, and the subordinate level provides more detail. The current study used the GOE rating to find the prototype of the metaphorical expressions used to refer to six primary emotions. Furthermore, the superordinate level, basic level, and subordinate level were used to categorize the used metaphorical expressions.

Emotion

Human beings live with many kinds of emotions from the time they are born. Evidence that shows people have emotions are expressions such as “I love you,” and “I’m angry.” Although we all have emotions innately, the definitions of emotions are still various. Emotion was first defined and categorized by Descartes between 1596 and 1650 in his book *The Passions of the Soul*. Descartes categorized the emotions called “primitive passions” into six passions comprised of: wonder, love, hatred, desire, joy, and sadness. In 1872, Charles Darwin classified emotions into six basic emotions: happiness, surprise, fear, disgust, anger, and sadness. Later, Ekman and Friesen (1971) classified emotions into six primary emotions based on facial expression: anger, disgust, fear, happiness, sadness, and surprise. Plutchik (2001) proposed eight basic emotions of joy, sadness, anger, fear, anticipant, surprise, disgust, and trust. In the same year, Parrott (2001) proposed six primary emotions: love, joy, surprise, anger, sadness, and fear. The current study adopted Parrott's theory as the frame for the six primary emotions since it is one of the latest and the emotions contained in the list are basic and generally known.

Research Methodology

Respondents and data collection

There were two sets of participants. The first group comprised 100 respondents, 50 from an English major and 50 from a non-English major. The respondents in the first group were chosen from the English and non-English major students purposely. There is no evidence to confirm that English and non-English major students would give similar or different English metaphorical expressions for emotions. Thus, this needed to be tested. The responses given by English major students may be or may vary from those given by non-English major students. The respondents in the first group provided the ground data of the emotions' metaphorical expressions.

The second group comprised 500 respondents studying at the undergraduate level. They rated the provided metaphorical expressions to identify the prototype metaphorical expressions of the six emotions. The questionnaires were not distributed in paper form but rather using Google on the worldwide web to facilitate access and analysis by the respondents and researchers. However, differently from Rosch's questionnaire, the current questionnaire used a five rating scale rather than seven as too many choices could bore the respondents and their answers might then be biased as they might simply want to finish the questionnaire rather than giving an authentic response.

Data analysis

The six primary emotions proposed by Parrott (2011) were applied since they cover the generic emotions of humans. The sample of 100 respondents (50 from an English major and 50 from a non-English major) were asked to give a metaphorical expression for each emotion by providing the pattern, for example, "LOVE IS ____." Their responses were categorized by following the inclusiveness level of prototype theory. According to Lakoff and Johnson (1980), metaphor is used in everyday life and when considering the way of speaking individually, each person has their own way of saying anything. This means the metaphorical expressions collected from the 100 respondents would be somehow both similar and different from each other. To find the prototype metaphorical expressions of each emotion, we chose the first 10 metaphorical expressions with the highest frequency given by respondents. The 10 metaphorical expressions of each emotion (60 in total) were contained in the GOE rating as it was not be possible to carry out the GOE rating with 600 questions. As a result, the questionnaires with 60 questions were distributed to 500 respondents. The metaphorical expression with the highest score for each emotion was labelled as the prototype metaphorical expression of that emotion.

Findings

Metaphorical Expressions from 100 respondents

The English metaphorical expressions given by the English major and non-English major students were different and had variety. The results supported Lakoff and Johnson (1980) who claimed that people always use metaphor in everyday life. This means that people can create any metaphor they want. However, the creation should fit with the native speaker. Non-native English speakers, Thais in this case, might not find such a fluently used metaphor when speaking English. Furthermore, they mostly lacked English vocabulary knowledge. The proportions using different and shared metaphorical expressions are shown in Table 2.

Table 2. Numbers of different and similar metaphorical expressions

		LOVE	JOY	SURPRISE	ANGER	SADNESS	FEAR
English major	Different	38 (76%)	38 (76%)	31 (62%)	28 (56%)	21 (42%)	28 (56%)
	Similar	12 (24%)	12 (24%)	19 (38%)	22 (44%)	29 (58%)	22 (44%)
Non-English major	Different	24 (48%)	20 (40%)	33 (66%)	22 (44%)	13 (26%)	29 (58%)
	Similar	26 (52%)	30 (60%)	17 (34%)	28 (56%)	37 (74%)	21 (42%)
English and non-English major	Different	44 (44%)	43 (43%)	53 (53%)	39 (39%)	23 (23%)	50 (50%)
	Similar	56 (56%)	57 (57%)	47 (47%)	61 (61%)	77 (77%)	50 (50%)

As can be seen in Table 2, the proportions using different and similar metaphorical expressions differed. When comparing the results from two groups of students with dissimilar majors, it is noticeable that the major of study influenced their use of English in delivering expression. English major students mostly created different metaphorical expressions. That is to say 5 out of 6 were distinctively recognized and compared things and only 24% of the respondents shared some similarities. In the case of LOVE, for example, the shared metaphorical expressions comprised MAGIC (2), FLOWER (2), BOOK (2), POISON (2), COLOR (2), and GIFT (2). The significance of this point can be considered as English major students' language capability in generating and using English to variously express their notions rather than non-English major students mainly creating similar metaphorical expressions;

only one type of expression had the higher number of frequency that was SURPRISE.

For the non-English major students, SADNESS was outstanding with 74% of the responses sharing sets of metaphorical expressions. The first top-five frequent metaphorical expressions of SADNESS were RAIN (15), DARKNESS (5), SONG (2), CANDLE (2), and SEA (2).

Last, combining the results from both cases showed that approximately half of the responses of each emotion shared some similarities. This showed some possibility of identifying the prototype metaphorical expressions for the six emotions. The ten most frequent metaphorical expression are shown in Table 3.

Table 3. Ten most frequent metaphorical expressions given by respondents

LOVE	JOY	SURPRISE	ANGER	SADNESS	FEAR
MAGIC (10)	FUEL (6)	MAZE (12)	FIRE (27)	RAIN (19)	DARKNESS (26)
FLOWER (5)	LIGHT (6)	TUNNEL (4)	POISON (8)	DARKNESS (9)	MIRROR (5)
STAR (4)	RIVER (5)	GIFT (4)	LAVA (7)	POISON (5)	CURSE (2)
BOOK (3)	FLOWER (4)	DOOR (4)	DEVIL (5)	SONG (6)	WEAKNESS (2)
CHOCOLATE (3)	WEATHER (3)	SMOKE (3)	BOMB (3)	EMPTINESS (4)	FOREST (2)
SONG (3)	SKY (3)	FIREWORK (3)	STORM (3)	FOGGY (4)	INVISIBILITY (2)
OXYGEN (3)	BALLON (2)	MAGIC (2)	ACID (2)	FEVER (3)	DOOR (2)
POISON (2)	BUFFET (2)	THUNDER (2)	SWORD (2)	BEAST (3)	SNAKE (2)
COLOUR (2)	DESSERT (2)	BOOMERANG (2)	HELL (2)	CANDLE (2)	POISON (2)
GIFT (2)	WIND (2)	GAME (2)	SUN (2)	SEA (2)	WEAPON (2)

Table 3 shows that, of the six emotions, ANGER and FEAR were the most frequently used metaphorical expressions, with FIRE (27) and DARKNESS (26) for ANGER and FEAR, respectively. The ten most used metaphorical expressions from each emotion were contained in the GOE rating and distributed to 500 respondents to develop radial networks of the primary emotions.

Metaphorical expressions categorized by the three levels of prototype theory

Before developing the results of the GOE rating, all the metaphorical expressions of the six primary emotions were categorized following semantic domains. Since there is no such clear semantic domain used as a frame for classifying emotions' metaphorical expressions into different domains, three linguists were asked to confirm the classification. In cases of disagreement, the linguists were asked to negotiate the final classification as shown in Table 4.

Table 4. Superordinate, basic, and subordinate levels of six emotions' metaphorical expressions

Superordinate level	Basic level	Subordinate level
LOVE	LIVING THING	FAMILY, LIFE, HEART, KID, MOM
	PLACE AND ENVIRONMENT	FLOWER, SKY, ROSE, MOON, MOUNTAIN, RAINBOW, AIR, CACTUS, LIGHT, OXYGEN, STAR, SUNNY, WATER
	THING	BOOK, MONEY, GIFT, BALLOON, GLASS, KNIFE, PERFUME, SHIT SHOES, SONG
	EDIBLE THING	CHOCOLATE, CANDY, POISON, CAKE, HONEY, STARBUCKS, SWEETS
	ANIMAL	BUTTERFLY, FLAMINGO
	WEATHER	WARMTH
	SPORT	FOOTBALL
	ACTION	HUG, GIVING, LIE, FOOTBALL
	ABSTRACT TERM	HAPPINESS, ADDICTION, BEAUTY, BRAVE, COLOUR, PURE, COMPLICATED, DREAM, EXPECTATION, FEAR, FREEDOM, MAGIC, GHOST, SPIRIT, BEING TOGETHER
JOY	LIVING THING	FAMILY, FRIEND, LIFE, DOG, BUTTERFLY, PARENTS,
	ACTION	SMILE, EATING, LAUGH, TRAVEL, GAME, SHOPPING,
	PLACE AND ENVIRONMENT	SKY, FLOWER, CLOUD, HEAVEN, SEA, SUN, WIND, COAST, GALAXY, HOUSE, LIGHT, OXYGEN, RAINBOW, RIVER, WATER, BREEZY
	THING	BALLOON, BAG, CLOCK, COTTON, FIREWORK, FUEL, GIFT, ICE, TOY, WATCH
	EDIBLE THING	DESSERT, FOOD, BUFFET, CANDY, CHOCOLATE, PIZZA, SHABU,
	ABSTRACT TERM	ADDICTION, ATTITUDE, BEST, COLOURFUL, ENERGY, HAPPY, HAVING, JOY, LOVE, MEMORY, PEACE, SHADOW, SUCCESS,

Superordinate level	Basic level	Subordinate level
SURPRISE	LIVING THING	FRIEND, CLOWN, CUPID, HUMAN, JOKER, ME, MONKEY, PERSON, TIGER, WING
	ACTION	GAME
	PLACE AND ENVIRONMENT	RAINBOW, MAZE, SKY, WIND, ABYSS, CLOUD, EARTHQUAKE, FLASH, LIGHT, METEOR, MOVIE, PARTY, WINDY, RAIN, ROCK, SMOKE, SPACE, STAR, STORM, THUNDER, TUNNEL, UNIVERSE, WATERFALL, WEATHER, ZOO
	THING	GIFT, FIREWORK, BALLOON, ALCOHOL, BONFIRE, BOOMERANG, CURTAIN, DOOR, GLASS, MONEY, PRESENT, THING, TOY
	EDIBLE THING	SOUR
	OCCASION	BIRTHDAY, FUTURE, ACCIDENT
	ABSTRACT TERM	UNEXPECTATION, CHALLENGE, CONCIDENTALITY, DOUBTNESS, DREAM, EMOTION, LOUD, MAGIC, MEMORY, SUDDEN
ANGER	LIVING THING	DEVIL, BEE, CAT, DOG, GIANT
	ACTION	LIE, BOILING, GAME, PLAY, SLEEP
	PLACE AND ENVIRONMENT	FIRE, SUN, STROM, SUNLIGHT, HELL, ROCK, CACTUS, LAVA, MOUNTAIN, RAIN, SEASON, STONE, STORM, TRAFFIC, WATER
	THING	BOMB, ACID, BONFIRE, FIREWORK, GUN, NUCLEAR, SWORD
	EDIBLE THING	POISON
	ABSTRACT TERM	HUNGRY, HOT, AGGRESSIVENESS, ARGUMENT, CRAZY, DARKNESS, GHOST, DISADVANTAGE, IMPULSIVENESS, INSANITY, LATENESS, OFFENSIVENESS, QUIETNESS, UNMANAGABILITY, BARRIER
SADNESS	LIVING THING	BIRD, BEAST, DOG, FATHER, LIFE, YOU
	PLACE AND ENVIRONMENT	RAIN, MOON, HOLE, OCEAN, RAIN, SEA, CEMETARY, FOGGY, HELL, METEOR, RIVER, SNOW, WATER
	THING	CANDLE, MONEY, SONG
	EDIBLE THING	MEDICINE, POISON

Superordinate level	Basic level	Subordinate level
	ABSTRACT TERM	DEATH, LOSS, DARKNESS, EMPTINESS, LONELINESS, POOR, BLACK, GRADE, NIGHT, TEAR, BREAK, DESPAIR, DISAPPEAR, DISAPPOINTMENT, GLOOM, EMPTINESS, EXPERIENCE, FEVER, HOPE, IMAGINATION, MISTAKE, SINK, QUIETNESS
FEAR	LIVING THING	DOG, SNAKE, AMPHIBIAN, ELEPHANT, MOM, PIGEON, REAPER, SNAIL, TIGER, TURTLE
	PLACE AND ENVIRONMENT	COLD, FOREST, WALL, CHASM, MOON, MOUNTAIN, OCEAN, RAIN, STONE, SUNLIGHT, TSUNAMI, WATERFALL, WAVE
	THING	BUBBLE, DOOR, KEY, KNIFE, LOCK, MIRROR, ROPE, THING, WEAPON
	EDIBLE THING	POISON
	ABSTRACT TERM	DARKNESS, GHOST, DEATH, BLACK, FAILURE, LOVE, WEAKNESS, BAD, HEAT, LONELINESS, BARRIER, CURSE, FALLING, FAST, GRAY, HALLUCINATE, SMELL, ILLEGAL, INVISIBILITY, LONELINESS, NARROW, OVERTHINKING, SILENCE, UNKNOWN, WITHOUT

From Table 4 it can be concluded that respondents mostly gave English metaphorical expressions using an ABSTRACT TERM to refer to emotions, followed by PLACE AND ENVIRONMENT. Some doubts might arise because this result differs from the claims by many scholars that “metaphor is used to comprehend abstract and complicated concepts in terms of a simpler one.” However, if we change the focus from “an abstract term to an abstract term” to “an abstract term to a simpler abstract term,” this might be understandable.

Radial networks representing the metaphorical expressions of six primary emotions

To determine the prototype metaphorical expression of each emotion, the one with the highest rating score was labelled as the prototype. When considering the scores of each emotion, the maximum and minimum value were different. Thus, we proposed an equation to rank the prototype level as follows.

$$RV = \frac{MAX - MIN}{R - 1}$$

Where
RV = Range value
MAX = Maximum rating score
MIN = Minimum rating score
R = Number of scales used in the GOE Rating

After applying the equation, the highest-point metaphorical expression was put in the center, and the lower the point was, the farther from the center of the radial network the metaphorical expression was labelled as shown in Figure 1.

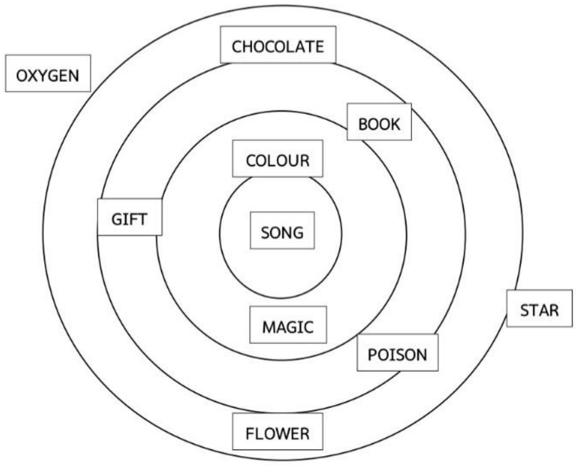

Figure 1. The radial networks of [LOVE IS _____]

The prototype of LOVE's metaphorical expression was SONG. LOVE can be interpreted and perceived in a wide range of ways including both positively and negatively. In a similar way, SONG has a variety of styles such as love song, sad song, and happy song which directly affect the listeners' feelings, inclusive of affection. This point parallels with relevant studies showing how song lyrics have an effect on feeling, opinion, and behavioral action. One interesting point is that song is capable of producing and encouraging listeners to internally feel affection and aggressiveness as well as external expressions (Fischer & Greitemeyer, 2006; Greitemeyer, 2009).

When compared to COLOR, LOVE can be pink, white, black, or red. Perception of color from each person's view is unique. For example, grey can elicit a negative feeling if one is having a bad day with awful weather; white can remind one of positives such as a state of simplicity and cleanness (Kaya & Epps, 2004). Furthermore, LOVE can generate the emotion that something is exciting and enchanted such as MAGIC. Thus, LOVE is as GIFT, the special stuff people want to receive; LOVE can be needed as with OXYGEN but can be harmful as with POISON.

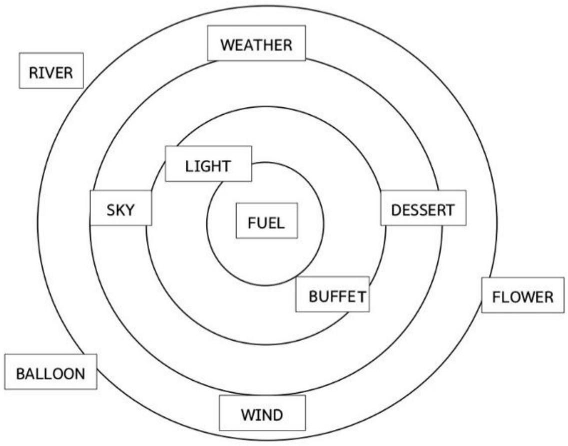

Figure 2. Radial networks of [JOY IS _____]

As shown in Figure 2, the prototype of JOY's metaphorical expression reflected that JOY was positive and could help people to become better or stronger regarding former weakness. For example, compare PEOPLE as VEHICLE, JOY is FUEL. Without FUEL, VEHICLE could not go any further. LIGHT can illuminate surroundings and make things bright is parallel with how JOY takes a vivid and glowing side of life to people, which fills them with happiness. Food is another necessary factor for all living creatures. BUFFET and DESSERT can remind people of a joyful moment while eating their preferred meal. On the other hand, a natural setting was less called to mind when the feeling of JOY was posed. Embracing oneself with peaceful SKY, WIND, and RIVER seems to be ideal scenery that can create a joyful moment.

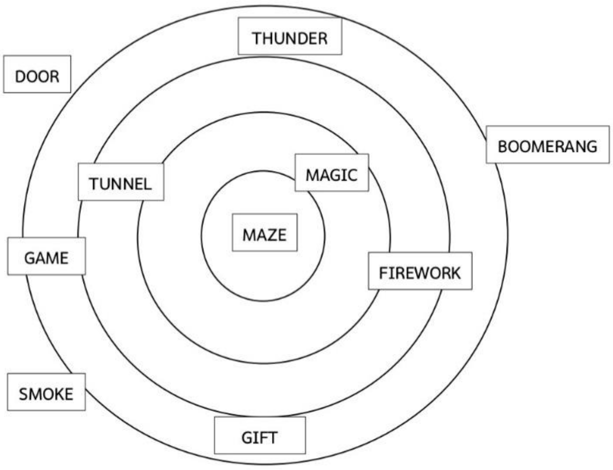

Figure 3. Radial networks of [SURPRISE IS _____]

As shown in Figure 3, SURPRISE's metaphorical expressions always referred to some things that were unsolvable, difficult to find a way out of, or something that suddenly happened. The MAZE was chosen to be the prototype of SURPRISE's metaphorical expression. MAZE and SURPRISE, share a common feeling, they can influence people's internal emotion as being stuck in a MAZE can make them surprised as things are not that easily predicted. Similarly, SURPRISE can result in the thought of TUNNEL as one may feel like they are in the middle of nowhere, and will never know what they will encounter ahead. SURPRISE was also compared with MAGIC as people may think of the latter as an occurrence of uncommon and special things, which is similar to the sense that we are amazed by SURPRISE. To a lesser extent, SURPRISE was seldom thought to be an object; that is, DOOR. Before entering a room, one sometimes has no idea what is behind that door; likewise, one may be unconscious while in the condition of SURPRISE.

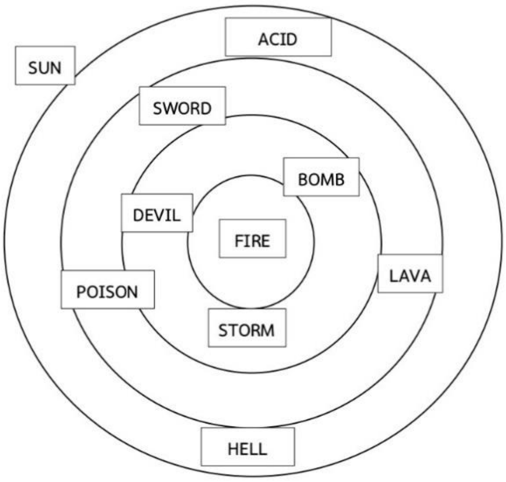

Figure 4. Radial networks of [ANGER IS _____]

As shown in Figure 4, ANGER's metaphorical expressions often mean something hot or bad, and can cause damage to life. FIRE was the prototype of ANGER's metaphorical expression. Just as FIRE is heat and burns things, angry people are normally hot-tempered and not readily able to deal rationally with situations. Interestingly, even though SUN can recall the same state of hot and heat as FIRE, it was less compared to ANGER. Because of ANGER, people might unconsciously misbehave and do awful things and act like the DEVIL. What is more, this intense feeling can devastate circumstances, and this was expressed through BOMB and STORM.

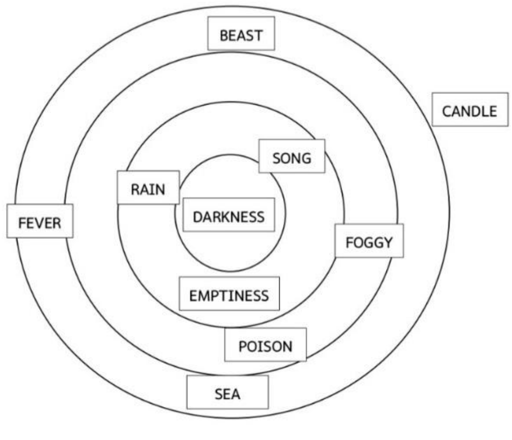

Figure 5. Radial networks of [SADNESS IS _____]

As shown in Figure 5, DARKNESS was the prototype of SADNESS' metaphorical expression, followed by RAIN, SONG, and EMPTINESS. People viewed SADNESS as a terrible thing that makes life darker. RAIN was also interesting since people compared RAIN to TEAR which is a visual sign was when people cry. Lyrics in SONG may make people recall some misery or bring back an old sad story. SADNESS was also compared to the state of EMPINESS in the sense that one may feel lonely and sorrow when one is alone or even living by oneself. CANDLE as a less frequent trend of metaphorical expression seemed to be the representation of SADNESS. People's unhappiness was seen as the dim light of CANDLE. Although it is a basic source of light needed in darkness, it cannot result in people clearly seeing things that remain in the darkness.

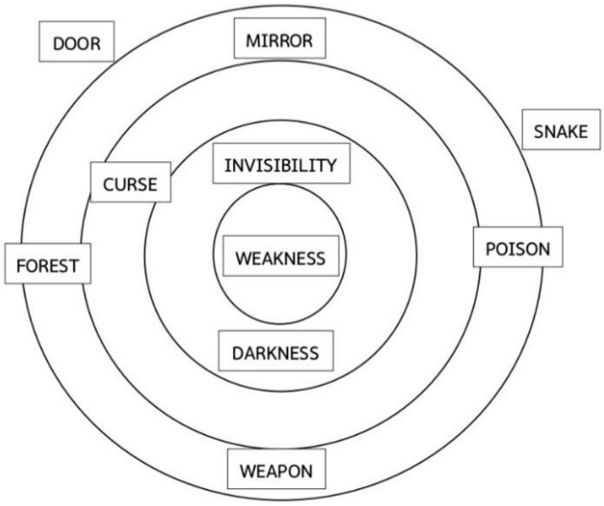

Figure 6. Radial networks of [FEAR IS _____]

As shown in Figure 6, the prototype of FEAR's metaphorical expression was WEAKNESS. As a matter of fact, WEAKNESS is one of the symptoms of FEAR. Thus, people might think that FEAR is WEAKNESS because one does not fear if one is strong enough. There is also a cognitive linkage between FEAR and sight; that is, INVISIBILITY and DARKNESS. We can assume that people might be afraid and feel insecure when they cannot see things including being in a dark place. Additionally, people may not directly be scared of DOOR, but rather of the unknown and anonymous things they suppose are behind it.

The prototype of English metaphorical expression of six emotions can reflect the term of respondents' cognition showing an individual's perception, the way they see the world including attitude toward emotions. Two main aspects of English metaphor production, to be categorized, might be considered retrieving from "Common cognition" and "Thai's cognition." The former involved with any issues or terms that were generally perceived by the general public. SONG, for example, could be regarded as the universal feature – regardless of a nationality – a kind of language people speak or even English proficiency, they cross the boundary of culture and linguistics through music. Similarly, SONG was metaphorically compared to LOVE and SADNESS, which is based on individual's life experience whether it was in such a positive or negative manner. "Thai's cognition," the latter, might be included to describe Thai's cognitive issue that is Thai idiom. ANGER is FIRE, for instance, found in this study was close to Thai idiom (โกรธเป็นฟืนเป็นไฟ). This signified respondents' cognitive term relating to what they know or learn from their own mother language and culture as well as meaning transfer between Thai and English. Interestingly, animals are significantly relevant or mentioned in Thai idiom but only one type of animal was compared to emotion in this study, that is FEAR is SNAKE. Rather, natural environment was highly seen in the metaphorical expression: [JOY is LIGHT, SKY, WEATHER and RIVER], [LOVE is FLOWER and STAR], [SURPRISE is THUNDER], [ANGER is STROM, LAVA, and SUN] and [SURPRISE is RAIN, FOGGY, and SEA].

Discussion and Conclusion

The results of emotions' metaphorical expressions from the 100 respondents suggest that approximately half of respondents had different or unique metaphorical expressions while the other half had some similarities. This reflected that even though the non-English major students had not had the chance to learn about and use as much English knowledge and culture as the English major students, they were still capable of using metaphors. Considering metaphorical expression by metaphorical expression, it seemed that not everyone could understand what the answer should be. All of them knew that [LOVE IS JOURNEY] is a metaphor, but when it came to their turn to create the metaphorical expression, some of them did not know what to present. Instead, they gave some answers as a way of interpreting the English word instead, such as [SURPRISE IS UNEXPECTATION].

The results showed that the positive metaphorical expressions were mostly chosen for positive emotions. In the same way, the negative metaphorical expressions were mostly chosen for negative emotion. For the positive emotions, SONG was chosen to be the prototype metaphorical expression of LOVE and FUEL for JOY. On the other hand, FIRE was chosen to be the prototype metaphorical expression of ANGER, DARKNESS for SADNESS, and WEAKNESS for FEAR. However, SURPRISE was an exception. It could be both positive and negative depending on the situation.

Ranking the metaphorical expressions in each emotion highlighted that there was a variety of metaphorical expressions – positive, negative, and neutral. Hall's (1904) statement that adolescence was the time of "storm and strife" could explain this phenomenon. Teenagers' emotions could shift from absolute happiness to extreme sadness rapidly, like being on an emotional rollercoaster. Azab (2018) mentioned that the brain has two main parts, with the limbic brain being responsible for the emotional system and the frontal regions being responsible for the logical system. In the early teen years, the limbic brain is underdeveloped and disconnected from the rational brain areas. However, the limbic brain is developed much later, when entering the adult stage. This could explain why teenagers, the Thai graduate students in the current study, expressed various metaphorical expressions for the six emotions.

It can be seen from the results that the majority of English major students shared a substantially lower number of similar responses regarding metaphorical expression compared to the non-English major students. Specifically, five out of the six types of metaphorical expression were differently expressed by English major students. Contrastingly, almost all metaphors toward expression (excluding only one type) were similar among the non-English major students. Some possible reasons behind this might be the factors that a limitation in foreign language production is likely to exist among the non-English major students who have had less opportunities to learn, practice, and use English in class or learning circumstances. This viewpoint confirms Lakoff (1987) with respect to the abstract concept of time, as the use of metaphor depends on the creator's background, experiences, and norm (Lakoff, 1987). On the other hand, the English major students might have greater capability toward language use, educational background, and learning experience to visualize and compare expressions to other terms, so that their notions or even terms selected are more varied. Apart from the educational factor, it cannot be denied that the formation of metaphorical expression is grounded in people's vocabulary and background knowledge (Kiseleva & Trofimova, 2017) as well as in thought and opinion (Lakeoff, 1987).

The concept of cognitive term in this study can extend that proposed by Katz and Ortony (1987) regarding the use of metaphor in expressing emotions by learners in psychology major at University of Illinois. In this study, personal experience was one factor influencing students with Thai nationality to metaphorically express their emotions whereas term of experience mattered in the study of Katz and Ortony. That is to say non-Thai participants with more English proficiency were capable of generating metaphors to compare events to both positive and negative emotions with a greater number and distinct qualities when they thought of relevant life experiences. Also, they created *frozen or dead metaphors*: frequently used metaphors later becoming an expression with brand new meaning such as *warm feelings* and *burning sensations inside* (Fussell & Moss, 1998; Katz & Ortony, 1987). This aspect might be parallel with the phenomenon of Thai students comparing things in English but similar to Thai idiom such as ANGER is FIRE and LOVE is POISON. Nevertheless, the dissimilar point of studies' results is that factor of English capability was seen as significant in the metaphor production process, but Fussell and Moss's research as well as the study of Katz and Ortony pointed out that a level of feeling related to a level of metaphorical expression. In other words, the intense feeling tended to produce a higher number and quality of metaphors (Fussell & Moss, 1998; Katz & Ortony, 1987).

As a whole, as some main concepts of metaphorical expression were identically expressed by learners, the idea of prototype can be utilized in learning and teaching figurative devices, especially metaphors. When it comes to expression, including the numerous types of emotions not mentioned in this study, the use of a simpler abstract term, place and environment, and thing are suitable basic-level prototypes of metaphorical expression rather than an animal, the weather, and sport. Using an example from the research results, LOVE can be compared to MAGIC to show how it is extraordinary and delightful which may be more understandable than describing LOVE as FOOTBALL, for not everyone is a follower of this kind of sport, so they might not perceive the positive meaning of love.

Since the respondents of this study were undergraduate students, the results are derived directly from this age group. It would be useful to expand the study by gathering more data from other age groups such as secondary school students, adults, and the elderly. The results from such study may show some interesting points or differences. Furthermore they may show some shared believes and culture through the emotions' metaphorical expressions.

A limitation of this study was that the respondents were asked to give the answers in single words. If they were given a chance to provide and explain the metaphorical expressions, we would understand more about their ideas.

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Needs Analysis of Dispensing Assessment for Thai Pharmacy Students

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Abstract

This paper examined the needs for criteria on dispensing assessment in English for Thai pharmacy students. A questionnaire including 37 items was distributed to 129 students, who were pharmaceutical science students and pharmaceutical care students, and 21 pharmacy experts. ANOVA and the *post hoc* test analysis were used to investigate whether there were differences of opinion among these three groups. Informant specialists were also consulted. The results showed disagreement among the groups on 21 items. Nineteen items remained after the Games-Howell *post hoc* analysis with 4 items eliminated. It can be concluded that students' work attitude was affected by the department they are in regardless of the same content provided. The study also confirmed previous research, in which content experts have tended to overlook this linguistic area since it is not their specialty. Students' opinion cannot be used solely in deciding which content to be taught without professionals in the field and vice versa. Conducting a needs analysis should at least involve professionals in the field, students, and language teachers.

Keywords: ESP assessment, criteria, needs analysis, pharmacist-patient communication, pharmacy students

Introduction and Literature Review

The significance that a pharmacist has in society is not only to prescribe drugs but also how they can talk to the patient and obtain information in order to be able to make decisions on which drugs are needed. One of the desirable characteristics of a pharmacist indicated by World Health Organization (WHO, 2006) was being a good communicator. It is without question that communication skills play a critical role in this occupation (Graham & Beardsley, 1986; Kimberlin, 2006). Investigating the needs in pharmacy communication is thus necessary for the establishment of English classes for pharmacy students. In fact, a pharmaceutical science faculty of a university in Thailand has received complaints from drug stores around Thailand, where training occurs, about the students' inability to communicate with patients in English effectively. As a response to the request from faculties of pharmacy on equipping students with English skills they need for work, tasks and rubrics for classroom assessment are needed for training the students and for assessing their performance while dispensing drugs in English.

Although the differences in the needs among the students and stakeholders can be difficult to include in the curriculum, students are considered essential stakeholders in conducting a needs analysis as well as teachers and local administrators (Brown, 2016). As a matter of fact, student validation is crucially important because, as pointed out by Bachman and Palmer (1996), taking into account student feedback in the design and development of test tasks can make both test preparation and test taking more effective. According to Brown (2016), a needs analysis can be conducted from five viewpoints: democratic, discrepancy, analytic, diagnostic, and a mix of those views. Considering target language use can be another approach to conducting a needs analysis. According to O'Sullivan (2012), English for Specific Purpose (ESP) or Language for Specific Purposes (LSP) assessment can be categorized in two ways: the field of its use (such as business and law) and the purpose (work, immigration, and study) of the test. Aiming the purpose of the study on the requests of students, teachers, and administrators whose purpose is shared among the group as it is for the work usage, this study adopted the democratic viewpoint in conducting a needs analysis, which included target-situation use analysis as the main concern.

Much interest (Gortney & Lundquist, 2013; Kolšek, Švab, Pavlič, & Bulc, 2003; Ried et al., 2007; Schell & Lind, 2003; Sibbald, 1998) has been paid to the education of pharmacy professionals, focusing on the pharmacist's communication skills with the patient in English. These studies can be categorized into three main groups according to the researchers: (1) the specialist in the field of pharmaceutical science; (2) cooperative research between an English language instructor and a pharmacy instructor with interest in second language learners; and (3) language instructors. Based on the different focuses of these researchers, various methods and the focus of the content have been suggested as to how to assess pharmacist-patient communication, some for native speakers of English and some for second language learners. It is worth noting that although none of these studies referred to their assessment as performance based, their assessment fell into that category.

Two studies by pharmacy experts (Kimberlin, 2006; Schwartzman, Chung, Sakharkar, & Law, 2013) on overall content matters related to teaching of communication of pharmacy schools in the U.S., Canada, and Puerto Rico revealed no information on linguistic details but rather on general communication skills. In some cases, pharmacy experts (Collett, Rees, Mylrea, & Crowther, 1994) did not include linguistic features in the patient-communication assessment, while some (Parkhurst, 1994; Sibbald, 1998) included some information concerning verbal expression. A possible problem found in these studies is the language background of the participants, as most of them are native speakers of English, and as a result linguistic details may not be needed for these groups of participants. Similar to what Manias and McNamara (2016) found, the background of the participants as native speakers or passing university language requirements was not connected with the issue of language and communication. While Chowdhury and Haider (2012) explained EFL pharmacy students as needing particular study skills for the whole course, not many studies can be found on EFL students participating in performance-based assessment related to medical or pharmacy students. In other words, communication skills are commonly inclusive of performance-based assessment while language use is not considered essential, even in the case of second language learners in previous research, which addressed general listening and speaking skills.

The focus of previous classroom assessment research (Graham & Beardsley, 1986; Hyvärinen, Tanskanen, Katajavuori, & Isotalus, 2012; Parkhurst, 1994; Sibbald, 1998) related to the assessment of students in the pharmacy field depended on the researchers' expertise. This means that some of these studies did not include students or language instructors as a part of the stakeholders. As an illustration, a sample rubric from a study by Graham and Beardsley (1986) suggested that assessment can be carried out only by pharmacy experts. As a matter of fact, experts tend to use their knowledge and professionalism as a baseline while linguists rely on language and communication aspects (Douglas & Myers, 2000). Similar to Dougla's (2000) concept including the content knowledge as a part of ESP assessment, some involvement from specialists in the field can add a greater range of authenticity to the assessment (O'Hagan, Pill, & Zhang, 2016) as stakeholders in order to obtain information about real needs specifically for dispensing drugs in English by Thai pharmacy students. The present study aims to answer the following research questions:

1. What are the relevant criteria for assessing the dispensing skills of Thai pharmacy students?
2. Do the students' opinions match the content experts' opinions?

Research Methodology

Context and Participants

All pharmacy students are required to have 400 training hours both at drugstores and hospitals. The faculty at the target university established cooperation with the drugstores around Thailand to accept these pharmacy students, especially drugstores in cities that are tourist attractions. A part of the agreement that the faculty made with the drugstores concerned the evaluation of the students' performance, which included the students' ability to communicate with patients. In the drugstores, pharmacy students had to serve all kinds of patients while under supervision of a pharmacist in charge. These pharmacists responsible for training the students were thus the ideal participants since they are familiar with assessing pharmacy students when practicing their dispensing skills at drugstores.

The consent form and questionnaire were sent to a list of 50 qualified drugstores obtained from a pharmacy school of a university. Personal information obtained from the pharmacists included only their sex and the amount of time that they had worked at the drugstore. Twenty-two questionnaires were returned out of 65. One of the questionnaires was missing some information, leaving 21 questionnaires available for data analysis. The returning method used most was mailing, while two questionnaires were returned by email, and one questionnaire was delivered and picked up in person. Most of the participants were not from Bangkok. Ten participants were male and 11 were female at 47.6% and 52.4% respectively. The dispensing experience at the drugstore of the participants varied from 8 months to 34 years.

Fifth-year undergraduate pharmacy students from a university in Bangkok, Thailand also participated in this study. Each year, approximately 140 students attend the target pharmacy schools. These students took three English courses, two fundamental English courses and one course of English for the pharmaceutical profession. Their English proficiency varied from B1 to C1 on the Common European Framework of Reference for Languages (CEFR). The students belonged to two fields of pharmacy – pharmaceutical science, which is for those that want to work in the drug industry, and pharmaceutical care, which is for those that wish to work in a drugstore. ESP courses were arranged not according to the English institute but by the requirements of the students' faculty. The professionals in the field can request the content and skills that they believe are appropriate for guiding their students in their field of their respective occupations. For the pharmacy students at the target university, one of the requests was to help students learn to dispense drugs in English.

The students were in two fields of study: pharmaceutical sciences and pharmaceutical care. At the beginning of their class time, the students were asked to fill in the questionnaire on a voluntary basis. A total of 132 students responded to the questionnaire, but three of them were found to be missing some parts of the data, leaving 129 students (39 males and 90 females) available for data analysis. Seventy students were in the field of pharmaceutical sciences at 54.3% and 59 students were in the field of pharmaceutical care at 45.7%.

Instrument

The instrument used in this study was the questionnaire developed from secondary research (Kimberlin, 2006) and the Thai dispensing rubric was distributed to pharmacy students and pharmacist experts. The questionnaire consisted of three parts: personal information, communication skills, and pharmaceutical science content. Developed to fit both the students and the pharmacists, the questionnaire was divided into two forms, with the only difference being in terms of personal information details. The first part of the questionnaire asked the students to indicate their pharmacy major, while the pharmacist's version requested information about how long they had worked in their field. The communication skills and pharmaceutical skill content section were developed based on the Thai dispensing rubrics and a survey on the skills identified on the assessment forms for pharmacy student communication with patients (Kimberlin, 2006). Some of the topics were derived from the Thai dispensing rubric, some from Kimberlin (2006), and some from both the Thai dispensing rubric and Kimberlin (2006). The total of 37 items for communication skills and pharmaceutical science content in the questionnaire was validated by language experts using IOC before distributing the questionnaire to the participants.

Apart from personal information, the questionnaire asked the participants to respond to two items: overall communication skills and pharmaceutical skills knowledge. The participants were asked to rate each item on a four-point Likert scale, numbered 4 to 1 as in very important, important, somewhat important, and not at all important respectively. In each section, a space was provided if the respondent wanted to add any suggestions. A total of six sections was composed of two main knowledge areas to be assessed, which were overall communication skills and pharmaceutical skills. The first section, overall communication skills, was composed of four divisions: initiating communication, verbal communication, concluding the encounter, and non-verbal communication. The second section, pharmaceutical skills content, was divided into two sections: eliciting information from patients and initiating education interventions. The content of the questionnaire according to its divisions is shown in Table 1.

All of the items were calculated to find the mean and standard deviation among the experts and students, which were divided into two departments: pharmaceutical care and pharmaceutical science students. In each part, the results regarding the experts were presented first followed by the students as a whole and the students according to their department. The items were considered based on the mean value it received. They were divided into three groups: “highly important” when the value was higher than three; “important” when the value was greater than two; and “not important” when the value was less than two. The mean of the items was examined in the first round when the criterion was less than 2.5.

Table 1. Questionnaire content according to its divisions

Sections	Divisions
I: Personal information	- Pharmacy major (students) - Time of work experience (pharmacy experts)
II: Overall communication skills	- Initiating communication - Verbal communication - Concluding the encounter - Non-verbal communication
III: Pharmaceutical skills	- Eliciting information from patients - Initiating education interventions

Data Analysis

The Games Howell *post ho*c test analysis was applied in order to investigate if there were differences among three groups of mean scores based on the opinions from the three groups of participants which were pharmaceutical care students, pharmaceutical science students, and pharmacy experts.

Findings

Initiating communication

Using ANOVA to compare the three groups, which were pharmacy experts, pharmaceutical care students, and pharmaceutical science students, the results showed different opinions on five items as their p-value was lower than .05. The items were *identifying yourself as a pharmacist*, *introducing your name to patients, confirming the patient's identity, calling patients by name*, and *offering a warm greeting*.

Table 2. Results of one-way ANOVA and post-hoc test on initiating communication

Variables	Games-Howell	Mean Square	F	P-value
1. Greeting patients		1.215	2.747	.067
2. Identifying yourself as a pharmacist		4.434	6.544	.002
pharm care and experts	.213			
pharm care and experts	.008			
pharm science students and experts	.093			
3. Introduce your name to patients		3.617	5.617	.004
pharm care and experts	.052			
pharm care and experts	.006			
pharm science students and experts	.264			
4. Confirming the patient's identity		.230	4.755	.010
pharm care and experts	.984			
pharm care and experts	.194			
pharm science students and experts	.219			
5. Ask for the patient's name		2.551	2.609	.077
6. Call patients by name		4.326	5.387	.006
pharm care and experts	.065			
pharm care and experts	.011			
pharm science students and experts	.379			

7. Offer a warm greeting		2.868	6.461	.002
pharm care and experts	.006			
pharm care and experts	.920			
pharm science students and experts	.013			

First, the *post hoc* test between pharmaceutical care students and pharmaceutical science students showed that two items were viewed differently by the two groups. The Games-Howell value of *introducing your name to patients* and *offering a warm greeting* was .052 and .006 respectively. The second was to compare the pharmaceutical care students and pharmacy experts. The results revealed that these two groups viewed three items differently, which were *identifying yourself as a pharmacist*, *introducing your name to patients*, and *calling patients by name* at .008, .006, and .011 respectively. Lastly, comparing the pharmaceutical science students and pharmacy experts showed that one item was in disagreement, which was *offering a warm greeting* at .005. Based on the results, four items not included in the rubric were *identifying yourself as a pharmacist to the patients*, *introducing your name to patients*, *asking for the patient's name*, and *calling patients by name.*

Verbal communication

From the results, six items were viewed to be significantly different among the groups, while one item, *using written information to emphasize and help with oral communication*, was considered to be partially significant at .053. The six items, which were *using appropriate tone of voice*, *using correct English language*, *using correct English pronunciation*, *avoiding medical jargon*, *modifying communication to meet special needs of patients*, and *using open-ended and close-ended questions*, were further analyzed with a *post hoc* test, while the one with partial significance was eliminated.

Table 3. Results of one-way ANOVA and post-hoc test on verbal communication

Variables	Games-Howell	Mean Square	F	P-value
1. Using pace and silence appropriately		.493	1.302	.275
2. Speaking loudly enough to be heard		.899	2.671	.073
3. Using appropriate tone of voice		1.424	4.693	.011
pharm care and pharm science students	.184			
pharm care and experts	.031			
pharm science students and experts	.285			
4. Using correct English language		5.822	6.544	.000
pharm care and pharm science students	.474			
pharm care and experts	.000			
pharm science students and experts	.003			
5. Using correct English pronunciation		2.468	6.293	.002
pharm care and pharm science students	.014			
pharm care and experts	.020			
pharm science students and experts	.667			
6. Avoiding medical jargon		.925	5.253	.006

pharm care and pharm science students	.068			
pharm care and experts	.074			
pharm science students and experts	.521			
7. Modifying communication to meet special needs of patients		1.458	6.001	.003
pharm care and pharm science students	.005			
pharm care and experts	.143			
pharm science students and experts	.974			
8. Using open-ended and close-ended questions appropriately		1.219	4.797	.010
pharm care and pharm science students	.010			
pharm care and experts	.227			
pharm science students and experts	.995			
9. Using written information to emphasize and help with oral communication		1.603	2.995	.053

First, the results of the *post hoc* test between the pharmaceutical care students and pharmaceutical science students showed that three items were viewed significantly different by the two groups at .014, .005, and .010 respectively: *using correct English pronunciation*, *modifying communication to meet special needs of patients*, and *using open-ended and close-ended questions appropriately*. Secondly, comparing the pharmaceutical care students and pharmacy experts showed that three items were in disagreement, which were *using appropriate tone of voice*, *using correct English language*, and *using correct English pronunciation*. Lastly, comparing the pharmaceutical science students and pharmacy experts showed that *using correct English language* was viewed significantly differently by the two groups at .003.

Comparing the two groups of students to the pharmacy experts, the pharmaceutical care students' view was significantly different from that of the pharmacy experts on three items, while the pharmaceutical science students' view differed on only one item, which was *using correct English language*. Another item on a similar issue but more specific was *using correct English pronunciation*, which showed that pharmaceutical care students valued this more than the other two groups. Although the experts did not view the linguistic items as important, the rubric included them.

Concluding the encounter

The results of the ANOVA showed that two items were viewed differently by one of the groups, which was *asking if there is anything else the patients would like to discuss* at .040 and *thanking the patients* at .000. These two items were further studied in the *post hoc* test analysis. For the first *post hoc* item, a difference was shown between the pharmaceutical care students and pharmaceutical science students at .050. This result is similar to the previous section where the pharmaceutical care students assigned a higher score to the items compared to the pharmaceutical science students.

Table 4. Results of one-way ANOVA and post-hoc test on concluding the encounter

Variables	Games-Howell	Mean Square	F	P-value
1. Summarizing the information		.081	.432	.650
2. Asking if there is anything else the patients would like to discuss		1.432	3.29	.040
pharm care and pharm science students	.050			
pharm care and experts	.198			
pharm science students and experts	.996			
3. Inviting the patients to contact if questions or concerns arose		.841	1.542	.217
4. Thanking the patients		5.591	9.738	.000
pharm care and pharm science students	.019			
pharm care and experts	.015			
pharm science students and experts	.000			
5. Ending the conversation politely		1.045	2.747	.067

For *thanking the patients*, the results revealed that the three groups viewed the item differently from the others as the importance was ranked at three levels. The highest mean that this item received was from the pharmacy experts at 3.57, followed by the pharmaceutical care students at 3.14, and pharmaceutical science students at 2.76.

Non-verbal communication

The results of the ANOVA showed that the groups viewed the item in the same way, so none of the items in this section was further analyzed in the *post hoc* test analysis.

Table 5. Results of one-way ANOVA test on concluding the encounter

Variables	Mean Square	F	P-value
1. Demonstrating appropriate eye contact	.985	2.469	.088
2. Demonstrating appropriate posture and body language	.289	.792	.455
3. Wearing appropriate attire	.473	1.637	.198
4. Displaying an appropriate health-professional manner	.267	1.005	.368

Eliciting information from patients

For both the pharmacists and pharmacy students, all of the items were rated as highly important by the two main groups. The ANOVA results showed that the groups agreed on one item, which was *asking patients about their concerns or reasons for the visit* at .074 and differed on the rest of the items.

Table 6. Results of one-way ANOVA and post-hoc test on eliciting information from patients

Variables	Games-Howell	Mean Square	F	P-value
1. Asking patients about their concerns or reasons for the visit		.683	2.645	.074
2. Giving patients opportunity and time to talk		.936	5.210	.007
pharm care and pharm science students	.004			
pharm care and experts	.583			
pharm science students and experts	.654			
3. Asking for a complete record of the patient's current health conditions and therapies		.438	4.100	.018
pharm care and pharm science students	.024			
pharm care and experts	.855			
pharm science students and experts	.315			
4. Asking questions to assess the patient's understanding of key information about medications		1.906	8.421	.000
pharm care and pharm science students	.000			
pharm care and experts	.356			
pharm science students and experts	.360			
5. Asking questions to assess the patient's experience with medications currently being taken		1.847	6.221	.003
pharm care and pharm science students	.003			
pharm care and experts	.928			
pharm science students and experts	.158			

The result of the *post hoc* test between pharmaceutical care students and pharmaceutical science students showed that all four items were viewed differently by the two groups. However, no other disagreement was found on any items between the two pairs.

According to the *post hoc* test results, the pharmaceutical care students had the highest mean score on all of the items except the last item, followed by the pharmaceutical science students with the second-highest ranking, and the pharmacy experts as last. The rank was changed in the last item as the pharmacy experts' score was higher than that of the pharmaceutical science students, while the highest was still that of the pharmaceutical care students. The different results point out that the pharmaceutical care students tended to rate all items in this section higher than the pharmaceutical science students and pharmacy experts.

Initiating educational interventions

Based on ANOVA, the results showed that two items were in agreement among the groups, which were *discussing one drug or therapeutic regimen at a time*, and *providing complete and clear instructions on medication*. The rest of the items were further studied with a *post hoc* test analysis.

Table 7. Results of one-way ANOVA and post-hoc test on educational interventions

Variables	Games-Howell	Mean Square	F	P-value
1. Emphasizing key information		1.368	6.477	.002
pharm care and pharm science students	.007			
pharm care and experts	.947			
pharm science students and experts	.020			
2. Providing reasons for advice		2.310	5.129	.007
pharm care and pharm science students	.008			
pharm care and experts	.782			
pharm science students and experts	.008			
3. Providing appropriate recommendations based on indications, efficacy, adherence, safety, and cost-effectiveness		2.698	6.645	.002
pharm care and pharm science students	.040			
pharm care and experts	.017			
pharm science students and experts	.368			
4. Discussing one drug or therapeutic regimen at a time		.279	1.100	.336
5. Providing complete and clear instructions on medication		.243	1.956	.145
6. Verifying the patient's understanding of the new information provided		1.826	5.203	.007
pharm care and pharm science students	.100			
pharm care and experts	.046			
pharm science students and experts	.429			
7. Working with patients to schedule the doses		4.467	10.171	.000
pharm care and pharm science students	.000			
pharm care and experts	.039			
pharm science students and experts	.854			

First of all, the results of the Games-Howell test between the pharmaceutical care students and pharmaceutical science students showed that four items were viewed differently by the two groups, which were *emphasizing key information* at .007, *providing reasons for advice* at .008, *providing appropriate recommendations based on indications, efficacy, adherence, safety, and cost-effectiveness* at .040, and *working with patients to schedule doses* at .000. Second, comparing the pharmaceutical care students and pharmacy experts showed that three items were in disagreement, which were *providing appropriate recommendations based on Indications, efficacy, adherence, safety, and cost-effectiveness* at .017, *verifying the patient's understanding of new information provided* at .046, and *working with patients to schedule the doses* at .039. Last, comparing the pharmaceutical science students and pharmacy experts showed that two items were in disagreement, which were *emphasizing key information* at .020 and *providing reasons for advice* at .008.

For *emphasizing key information* and *providing reasons for advice*, the pharmaceutical science students rated the items significantly lower than the others, while the pharmaceutical care students agreed with the pharmacy experts. The next two items, which were *providing appropriate recommendations based on indications, efficacy, adherence, safety and cost-effectiveness* and *working with patients to schedule the doses*, revealed that the pharmaceutical care students thought differently from the pharmaceutical science students and pharmacy experts, even though no difference can be pointed out when comparing the whole student population with the pharmacy experts.

Finally, *verifying the patient's understanding of the new information provided* indicated a scaling result. Although the whole student population seemed to disagree with the pharmacy experts on this item, the results showed that the pharmaceutical science students differed from the experts but did not differ from the pharmaceutical care students. This means that the level of agreement was different as in a scaling system. In other words, the pharmaceutical care students had the highest mean score at. 3.69, followed by the pharmaceutical science students with the second-highest ranking at 3.47, and the pharmacy experts with the lowest ranking at 3.24.

Out of the 37 items in the questionnaire, disagreement among the groups was found on 21 items after the ANOVA analysis, but the items were reduced to 19 after the Games-Howell *post ho*c analysis with 4 items eliminated. This resulted in 33 items from the questionnaire as relevant criteria to be included in the dispensing rubric (See Appendix). The students in the pharmaceutical care field viewed most of the criteria listed as more significant than the others as their scores were the highest among the groups for most of the items. The pharmaceutical care students viewed 9 items different from the pharmaceutical science students and pharmacy experts, who agreed on all of them, which were: *introducing your name to patients*, *calling patients by name*, *using correct English pronunciation*, *modifying communication to meet the special needs of patients*, *using open-ended and close-ended questions appropriately*, *asking questions to assess the patient's experience with medications currently being taken*, *providing appropriate recommendations based on indications, efficacy, adherence, safety, and cost-effectiveness*, *verifying the patient's understanding of the new information provided*, and *working with patients to schedule doses*.

Thanking the patients was the only item that was viewed differently among the groups. The opinion on how important this item was can be ranked at three levels, with pharmacy experts at the highest, followed by pharmaceutical care students, and pharmaceutical students at the lowest. In addition, two items that the pharmacy experts did not rate as important as the pharmaceutical care students, who had the same stance as the pharmaceutical science students, were *identifying yourself as a pharmacist* and *using correct English language*. The pharmaceutical science students viewed three items differently from the pharmaceutical care students and pharmacy experts, who agreed on all of them, which were *offering a warm greeting*, *emphasizing key information*, and *providing reasons for advice*. Some of the items were viewed differently between the pharmaceutical care students and pharmaceutical science students, but the two groups did not view them differently from the pharmacy experts, which were: *asking if there is anything else the patients would like to discuss*, *giving patients opportunity and time to talk*, *asking for a complete record of the patient's current health conditions and therapies*, and *asking questions to assess the patient's understanding of key information about medications*.

Discussion and Conclusion

A needs analysis can decrease the researcher's bias by including various stakeholders in the development process (Huhta, 2010). Although some studies (Aliakbari & Boghayeri, 2014; Edwards, 2000; Tsou, 2009) preferred to analyze the needs on only students and some (Basturkmen & Shackleford, 2015) focused on the students and the language instructors, the needs analysis through the interview with informant specialists and the students can help generate various insights and verify the literature review to initiate the tasks. Likewise, the task development tended to include at least three groups of stakeholders including professionals in the field, professionals in the educational environment, language experts, and the test-takers (Grice et al., 2017; Johnson & Riazi, 2017; Luka, 2008; Macqueen, Pill, & Knoch, 2016). The more detailed the needs analysis is, the better the language teaching program is to serve students with a more favorable outcome (Long, 2005). Employing both students and professionals in the work and educational fields aimed to generate more precise content for the task.

It is clear that the pharmacy experts did not pay as much attention as the pharmacy students to *using correct English language*, while the students in both fields strongly believed in the importance of this item. This may stem from their experience in dispensing drugs in English assuming from the response that the English usage of these pharmacists is not always grammatically accurate when dispensing drugs to patients, but they can still offer service to patients. This led to the concept of the appropriate English proficiency level that the students should have when graduating from university. Currently, the Thai government sets a standard English level for Thai graduates at the B2 level, which might be appropriate considering the ability explained in the CEFR can-do statement for qualitative aspects of language use (CEFR, 2018) as the description of the interaction section indicates below.

Can initiate discourse, take his/her turn when appropriate and end a conversation when he/she needs to, though he/she may not always do this elegantly. Can help the discussion along on familiar ground confirming comprehension, inviting others, etc.

Various classifications among academic disciplines have long been acknowledged (Jones, 2011). Based on the attitudes of the two groups of the students, this study concluded that they held different degrees of attitudes. This is in line with Linnenluecke, Russell, and Griffiths (2009) who suggested that a multi-culture can exist within the same organization. It is asserted by Lee (2007) who mentioned that the institution and the discipline can result in sub-culture. This can be found in significantly different views of pharmaceutical science students and pharmaceutical care students on servicing the patient although the pharmaceutical science content is the same for both departments until the fifth year, which was the time the data was collected. It is speculated that the students' work attitude was affected by the department they are in regardless of the same content facilitated. Pharmaceutical care students rated the items higher than the other groups since they were groomed to the role of dispensing drugs in drug stores. In contrast, pharmaceutical science students are trained to work in the drug industries which do not seem to require the students to perform in terms of service-minded skills. Considering service-mindedness, it is worth noting that the training for pharmacy students may need to be improved in terms of quality of service-mindedness, especially pharmaceutical science students, who did not view offering a warm greeting as high as pharmaceutical care students and pharmacy experts. This result agreed with Austin (1990) who stated that the culture of the discipline can mainly contribute to the identity of the member. The culture of the field the students are in might reflect their thoughts on how important the criteria are in performing the task.

In order to communicate successfully, a person needs to apply their language capability, their cognitive, and their non-cognitive skills for a certain context (Elder, McNamara, Kim, Pill, & Sato, 2017). To achieve such result, a joint cooperation between the fields is necessary. Implementing the topical knowledge that involves knowledge in the specific field needs cooperation from the specialist informant (Douglas & Myers, 2000; McNamara, 1996). Yet, it is challenging to balance the content and the language. Although the study avoided the work sample approach which is not attentive to the linguistic factors, pharmacy experts did not view using correct English language and pronunciation correctly as important as both groups of the students. This result from the questionnaire matches what Elder (2016) reported about the experts' view toward the assessment that it tends to differ from that of the linguists'. Similarly, Macqueen et al. (2016) stated that the experts do not have the ability to specify the needed linguistic criteria for the assessment.

As a matter of fact, the experts tend to use their knowledge and professionalism as their baseline while the linguists rely on the language and communication aspects

(Douglas & Myers, 2000). The professionals have a tendency to award a greater score ratio to their content knowledge than linguistic detail (Byrnes, 2008). Thus, using the expert's judgment alone in assessing ESP assessment does not fit the construct of assessing the linguistic ability in the content to which it belongs. The development of ESP assessment with proof of validity needs collaboration between content teachers and language teachers in order to balance their joint interest.

However, such collaboration may be hard to establish as not much interaction between these disciplines were originally formed (Arnó-Macià & Mancho-Barés, 2015). It is vital for a course developer to extend the relationship to the professionals in the fields. In fact, decent educational practice can occur when the collaboration and the understanding between the content and the language instructor can be compromised (Brennan & Naerssen, 1989). One method to ease the process is that the university and the faculties engage in and assign voluntary persons who could be responsible for such consultation.

Recommendations

In the present study, the content experts focused on the content needed for the target use situation through their experience, while the students were still striving to perfect their overall dispensing skills as part of their goal is to pass the license exam. Students' opinions cannot be used solely without the expertise of professionals in the field and vice versa; thus, conducting a needs analysis should involve both professional stakeholders and students. Nonetheless, the disagreement between the students and the experts can complement the needs in other aspects. Additionally, the department in which the students study can reflect their work attitude even if the students are taught the same content and attend the same classes for five years. Although much of the previous research has supplied suggestions about which criteria to assess, adopting content from the literature review alone will not lead to the justification of which criteria may fit a particular context. In other words, investigating local needs can truly pinpoint the content relevant for the learners' needs.

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Needs Analysis of English for Engineering Staff in the Electronics Industry in Phra Nakhon Si Ayutthaya and Pathum Thani, Thailand

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Abstract

This study aims to explore the English-language needs of 190 engineers, engineering operators and administrative staff in the electronics industry, located in Phra Nakhon Si Ayutthaya and Pathum Thani, the two central areas of Thailand. The research instruments were a questionnaire and a semi-structured interview. The data collection period ran from January to March 2019. The findings revealed that they needed to learn English in three main areas involving technical and business content, as well as daily life communication. Conversational and speaking skills were considered most needed among the participants, whereas reading and writing were less relevant. Although they realized the importance of English and showed interest of learning the language, their main constraints concerned time, family, work schedule and finance. Similar to the younger Thai generation, they liked surfing the Internet and experiencing online entertainment which somehow helped improve their English language skills. A self-learning module combining not only authentic engineering contents, but also business and general circumstances with a sense of pleasure and fun was recommended.

Keywords: needs analysis, ESP, engineering, electronics industry

Introduction

In the era of Thailand 4.0, English has become a major global language across businesses and industries. Electronics manufacturers as part of the industrial sector being promoted in Thailand have a strong need for human resources equipped with English proficiency to increase competitiveness in the global market. However, little research has been conducted into this area of inquiry. Therefore, needs analysis of employees in an electronics manufacturing context should be conducted. To meet the stakeholders' English-language needs, suitable guidelines and teaching and learning materials for English training for communication must be tailor-made for engineering personnel.

Literature Review

Importance of English Language as a Global Language and Thailand 4.0

English is currently an international language, which is widely used as a means for communication among people of different language and cultural backgrounds (Cambridge Assessment, 2019; Crystal, 1997; Rappa & Wee, 2006). It acts as a catalyst for the economic development of Southeast Asian countries. As stated by Pandey (2014), the world is now entering the revolution of communication; hence English is used as a lingua-franca of the business world, and recognized as one of the six official languages of the United Nations. Moreover, according to ASEAN Article 34, English has been assigned as the working language of ASEAN countries.

Due to the policy of Thailand 4.0., many local and international companies in Thailand agree that effective English language skills are crucial for their employees as this increases the likelihood that the companies will achieve market penetration at the regional and international levels. As for employees, English language competence is considered critical. It is an important tool that assists them to progress in their career path, allows them to access and update their technical information, and facilitates self-development (Cheep-Aranai, Chutichaiwirath, Grubbs, & Brady, 2017; Hart-Rawang, 2009). Thus, English communication skills are necessary to serve the demand of the global and local businesses, enabling Thailand and its workforce to progress toward Thailand 4.0. Professional and English skills are equally required by the manpower in the era of Thailand 4.0. Yet the Department of Industrial Promotion (2017) stated that Thailand lacks quality manpower development in the electronics industry, relating to both professional and English language competency. Thus, it should be noted that more research into the needs of technical personnel is required.

Electronics Industry in Thailand and Needs of English Language

Smart electronics is one of the new targeted S-curve industries that the government of Thailand is promoting. Regarding the 1976 annual revenue of this industry, it was worth approximately a quarter of all national exports. In 2016, the electronics industry hub was worth $55 billion and ranked 14th largest electronics and electrical exporter in the world (Board of Investment, 2019). Phra Nakhon Si Ayutthaya and Pathum Thani, two provinces in central Thailand, are home to many electronics factories. Consequently, Pinprathomrat (2019), former President of Rajamangala University of Technology Thanyaburi (RMUTT), Pathum Thani and a current Thai senator, announced a university policy to serve the needs of Thai human capital with regard to the electronics industries. Moreover, RMUTT is located at Pathum Thani, adjacent to Phra Nakhon Si Ayutthaya, where many industrial estates are also situated, including numerous electronics plants. In other words, both provinces are suburban provinces to the north of Bangkok where a large number of Thai and foreign companies and factories including those related to production of electronics spare parts are located (http://thailandindustry.blogspot.com). Thus, a special needs analysis for a particular group of employees in the electronics industry is required; and the data obtained could be used for designing a training module that meets the needs of learners at work.

Needs Analysis of Employees in ESP Context and English Training

Although a plethora of research studies were conducted on needs analysis of Thai employees in different industries, especially hospitality businesses, most focused more on the service industry. However, reviewing these studies could provide important guidelines for directing the needs analysis, in order to design English for Specific Purposes (ESP) training for employees in the electronics engineering industry. Cheep-Aranai et al. (2017) investigated English language proficiency needs for business workers, both at the operational and management levels. They also investigated English proficiency needs for English major students, and for English major students with the aim to find out whether there was a gap between what was learned at the university and what was expected from a new graduate in the actual business sector. The data obtained could be used for outlining a business English module. The instruments used were a questionnaire and a semi-structured interview. The interviewees, selected by purposive sampling, included those in managerial position, such as a director, a manager, and a trainer in a hotel. The questions asked were related to the importance and needs of business English, methods of communication, and authentic learning materials. The participants were 96 students, who responded to the questionnaires asking for their demographic data, needs of business skills, and business English related to jobs in the market. It was found that there were employers who preferred students' English ability over the knowledge of content and knowledge of the world. This included positive language ability and positive work characteristics, such as eagerness to learn new things, activeness, cheerfulness, confidence, creativity, thinking skills, and responsibility. It should be noted that there was some mismatch of the skills needed. From the business' point of view, the correspondence was made through email. The students, however, focused on the listening and speaking skills for a business purpose.

In addition to Cheep-Aranai et al. (2017), Prachanant (2012) claimed that needs analysis plays a crucial role in the curriculum of developing ESP. The study surveyed the needs, functions and problems of the English language of 40 tourism employees. A questionnaire was used and data were analyzed by frequency, percentage, mean, and standard deviation. It was found that speaking was the most important skill, while the less important ones were listening, reading, and writing, respectively. The three most relevant functions in using English language were giving information, followed by providing services, and offering help. Four English-use problems were related to the inability to understand foreigners' accents, inappropriate words and expressions, inadequate vocabulary, and lack of grammar knowledge.

Moreover, Chenaksara (2005) conducted research on needs analysis for English communication skills of the Thai airways international cabin crew. The study explored the English communication problems of the Thai Airways international cabin crew and analyzed the English training needs for English communication skill improvement. The results showed that listening and speaking skills were perceived as their problems. The major cause of the listening problem was accent, especially Australian and Indian. English being the second language of the cabin crew was the main cause of the speaking problem.

To the researchers, the analysis of English needs of workers is one of the most important steps, prior to the design of an English training module for a particular group of learners (Brown, 1995; Cheep-Aranai et al., 2017; Dudley-Evan & St John, 1998; Hutchinson & Waters, 1987; Jordan, 1997; Long, 2005). Different groups of professions appear to possess specific aspects of their own English language needs, including problematic skills and the priority given to each particular skill. There are some similarities, such as the appropriateness of accents, and events and functions needed to be taught. Particular groups of businesses apparently possess some level of English specialty. This could range from different knowledge of vocabulary, expressions, grammatical structures, accents, skills, events, functions and contexts, to differences among individual employees. This kind of information is important and must be used as a basis for course design. From the studies being reviewed in this research, a questionnaire and an in-depth interview are commonly used as research instruments for understanding these particular aspects of the needs of specific groups of participants. The information from the review of the past research is taken into consideration in the research design of the present study.

English Communication for Engineers

Regarding research into English communication among Thai engineers, Hart-Rawang (2009) explored English language communication in an engineering workplace in Thailand. The purpose was to design a suitable ESP training syllabus for automotive engineering. Three groups of participants were: 1) automotive engineers in automotive parts manufacturers, 2) foreign engineers, and 3) ESP teachers from two selected technology universities in Thailand. The two main research instruments were a questionnaire and an in-depth interview. It was found that all four skills of English language are important to these global engineers, especially when they needed to take part in a conversation. Moreover, English can act as a blockage preventing an engineer from exploiting their professional knowledge; while Thai engineers with proficient English find English as an opportunity to make contact with overseas partners and customers, gain the latest knowledge and technology, as well as to gain opportunities for career advancement. As stated, English is important for their professional communication worldwide. Therefore, general English, business English, technical English, skills development, and learning strategies are crucial aspects in which they need to be trained. However, time management and limited financial resources are two main constraints preventing employees from attending training.

Regarding the instrument used for examining needs analysis, Tangprakun (2010) used a questionnaire to survey the English for communication skills toward English needs of engineering staff working in Bangkok. Similar to Hart-Rawang (2009), the data obtained from 79 Thai staff were used for designing an English training module for engineers. The instrument was a questionnaire. Descriptive statistics used for the analysis were percentages, frequencies, means, and standard deviations. The results revealed that out of the four English language skills, these engineers were able to perform best in reading skill, while the most problematic skill was listening.

Unlike Hart-Rawang (2009), Abrahim (2008) examined English communication needs of Chinese undergraduate engineering students at UiTM Pulau Pinang in Malaysia. It was found that effective speaking and writing skills were essential to the work of these practicing engineers and the universities should equip them well with these skills before graduation. Real life experiences, such as group meetings and public speaking, were very important.

Similar to Abrahim (2008), Kassim and Radzuan (2008) suggested that effective English oral communication skill is beneficial to employees in their workplaces. In the engineering manufacturing industry in Malaysia, professional engineers with decent English oral communication skills can successfully execute routine work, and possibly be promoted for career advancement. It is important that engineers need to have adequate English communication skills, especially the speaking skills in order to function well in particular events at their workplaces. It was concluded that Malaysian higher institutions must prepare their engineering undergraduates with adequate English communication skills, as this can affect their employability.

In Thailand, novice engineers tend to lack confidence when communicating in English, especially orally (Jarupan, 2013; Kaewpet, 2011; Rajprasit, Pratoomrat, Wang, Kulsiri, & Hemchua, 2014). Their problems in speaking and reading affect their professional communication at work (Jarupan, 2013; Rajprasit et al., 2014). It was also reported that Thai automotive engineers need effective English skills involving listening, speaking, reading, writing, and language learning strategies (Hart-Rawang, 2009).

According to Clement and Murugavel (2015), engineering students need training from their English teachers to improve their confidence in using English which relates to employability after graduation. However, most engineering syllabi tend to emphasize mechanical content, rather than English-language skills development (Ayokanmbi, 2011; Raina & Pande, 2012). In addition, global engineers need to acquire English and multicultural skills (Ayokanmbi, 2011). In Thailand, new engineers lacked confidence in speaking (Kosanashunhanan, 2016), while more experienced engineers still struggled with their writing at work (Hart-Rawang & Li, 2008; Joungtrakul, 2018; Loahachsiboon, 2011). To the researchers, the different problematic skills of recent engineering graduates and senior engineers may result from their dissimilar responsibilities in organizational structure. While new graduates take care of basic oral tasks, highly experienced employees are more likely to deal with written forms of communication.

Similarly to the majority of prior research results, Kosashunhanan (2016) carried out a study to investigate problems of communicating in English language among Thai engineers in Japanese companies located in Thailand. A questionnaire and an interview were used as the instruments for data collection. The results showed that most Thai engineers at an operational level used English every day. Reading skills were mostly used for reading emails and reading information from the Internet. Listening was their second priority especially during meetings, business contact, and when relaxing with listening to songs and watching movies. Writing was needed for email contact. Speaking, however, was hardly used at work. The problems in using English were related to vocabulary and grammar. This could affect Thai engineers' English reading and writing skills. From the reviewed literature, it appears to the researchers that engineers need effective English-language skills in order to operate daily at work and potentially for career advancement. Lack of vocabulary and grammatical knowledge is believed to be one of the main sources of their English communication constraints.

It should be noted that employees' ability to use English at work is desirable. However, quite a number of novice engineers, or engineering students who are entering the engineering profession, appear to have limited English proficiency and are not meeting the standard for the engineering profession (Kaewpet, 2011; Rajprasit et al., 2014; Wattansakulpusakorn, 1996). Moreover, they had limited writing abilities (Wanchid, 2007) and also lacked confidence, especially in their speaking and reading skills (Jarupan, 2013). An English training module, therefore, is needed to increase English language proficiency of employees. This module needs to include general English, business English, and technical English relevant to the context at work (Cheep-Aranai et al., 2017; Hart-Rawang, 2009). However, the researchers stated that the English used in the electronics industry is different from that used in other industries.

The researchers conducted this study to investigate the English language needs of engineers in the electronics industry. The findings of the study may reveal the specific English language needs of engineers, engineering operators, and administrative staff in Phra Nakhon Si Ayutthaya and Pathum Thani electronics companies. The realization of the language needs in the workplace will create opportunities for the companies or administrators to design an effective English language curriculum, which will suit engineering staff at both operating and administrative levels, especially those in Phra Nakhon Si Ayutthaya and Pathum Thani in order to meet the needs of Thailand 4.0.

Research Objectives

This study aims to examine English language needs of engineers, engineering operators, and administrative staff at Phra Nakhon Si Ayutthaya and Pathum Thani electronics manufacturing companies with regard to their demographic information, work related to English language use and skills/strategies required in English courses/classroom, and English language communication discourse and limitations of English proficiency.

Research Methodology

Based on quantitative and qualitative approaches, a questionnaire and an interview were employed.

Research Instruments

A Likert rating scale questionnaire comprised of 38 closed-questions was administered to examine the participants' English-language needs. This questionnaire was developed using the study of Hart-Rawang (2009), which initially investigated needs of automotive engineers working in Thailand. The questions were validated by experts in the fields of English and electronics engineering (IOC=0.95). The questionnaire was divided into four main parts: demographic information of the participating engineers, engineering operators and administrative staff as well as evaluation of English proficiency; work related to English language use and skills/strategies required in their English courses; English language communication discourse of engineers/ engineering operators/administrative staff; and limitations of English proficiency. The data were analyzed and presented in the forms of frequency and percentage.

Semi-structured interviews were conducted on a voluntary basis with two engineers, two engineering operators, and two members of administrative staff. The questions were in accordance with the following aspects: The role of the English language in the workplace; advantages and disadvantages for those who can use the English language; measures taken to improve English language abilities of engineers, engineering operators and administrative staff in the workplace; and limitations for the measures implemented. The interview data were recorded, transcribed, and grouped for further data analysis and discussion.

Samples

The samples in this research were engineers, engineering operators, and administrative staff in electronics manufacturing workplaces in Phra Nakhon Si Ayutthaya and Pathum Thani. The total number of the samples was 190, including 86 engineers, 61 engineering operators, and 43 administrative staff members in three electronics manufacturing workplaces. Once the initial answers from the open-ended questions were explored, the semi-structured interviews were conducted.

From the list of electronics companies in Phra Nakhon Si Ayutthaya (Phra Nakhon Si Ayutthaya Provincial Industry Office, 2019) and Pathum Thani (Pathum Thani Provincial Industry Office, 2019), seven companies voluntarily participating in this study, including three in Phra Nakhon Si Ayutthaya and four in Pathum Thani. All of the participants were employees who volunteered to take part in this research.

Results

This section includes the findings, as shown in the following parts:

Demographic Information and English Language Proficiency

There was a total of 190 participants (N= 190) including engineers (EN), engineering operators (EO), and administrative staff (AS), who were responsible for three areas of work involving process planning, production line, and quality control.

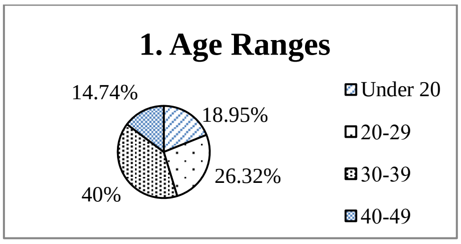
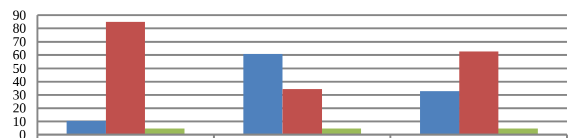


Figure 1. Age Ranges of Participants

From the demographic information, the percentage of male workers (62 %) was more than half of the total number of participants in this study. With respect to the age ranges (Figure 1), nearly two-thirds of participants were aged 20-39 years old (approximately 67%). They mainly held bachelor's degree (63%) or less (33%) as shown in Figure 2.



	Pathum Thani	Ayutthaya	Overall
Lower Bachelor	10.38	60.71	32.63
Bachelor	84.91	34.52	62.63
Master	4.72	4.76	4.74

* The data were presented based on the two data collection areas without a comparative purpose.

Figure 2 Education Levels of Participants

In addition, as shown in Figure 3, the majority of the participants (94%) reported that they started learning English language either in kindergarten or primary school. Primarily, the instructors used both Thai and English (65%) in class (Figure 4). Overall, most participants (70%) reflected that they were not able to use English effectively. Still, the remainder (30%) said their English language is effective enough.

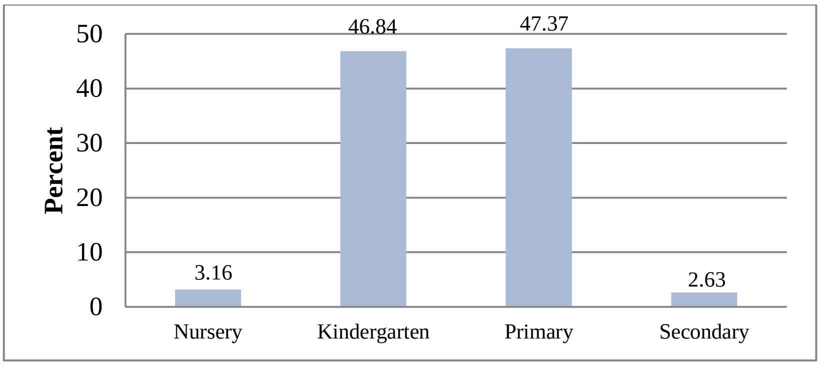
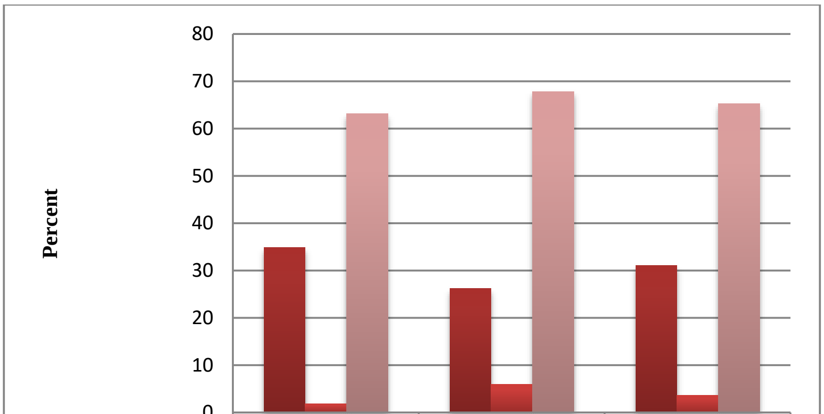


Figure 3. Stage Started Learning English Language



	Pathum Thani	Ayutthaya	Overall
Thai Language	34.91	26.19	31.05
English Language	1.89	5.95	3.68
Both	63.21	67.86	65.26

* The data were presented based on the data collection areas without a comparative purpose.

Figure 4. Medium of Instruction

When being asked to perform individual self-rating on skills (Table 1), most participants specified that their best skill was conversation with a mean score of 1.98, followed by reading ($\bar{x}$=1.93), writing ($\bar{x}$=1.84), and speaking ($\bar{x}$=1.69). However, overall participants appeared to rate their self-rating scores below average ($\bar{x}$=2.00). It should be noted that they rated conversation skill as the most fluent, with speaking skill the least. From this it could be interpreted that the participants may need to improve their speaking skills such as oral presentation and public speaking.

Table 1. Four-Point Self-Rating Scale on English Skills

Self-rating on English Skills	Mean	S.D.
Conversation/Interaction	1.98	.91
Reading	1.93	.70
Writing	1.84	.69
Listening	1.75	.73
Speaking	1.69	.71
Overall English proficiency	1.76	.68

In respect to the participants' English language training experience, it was found that after graduation, more than half (54%) reported they sometimes attended English training courses, while approximately 40% answered they rarely or never attended training. It should be noted that although more than half reported that they sometimes attended training, the data from the interview reflected that they in reality hardly attended any courses. In addition, most participants had never experienced overseas training, as only 15% mentioned they have ever trained abroad, and the length of the training was three months maximum.

Table 2. Means of English Proficiency Development

Means of English Proficiency Development	Frequency	Percentage
Self-studying through commercial English language learning books	63	33.16
Listening to English songs and watch soundtrack films	52	27.37
Watching/Listening to news or programs on radio and TV	39	20.53
Studying at good reputation English language institutes	15	7.89
Practicing with foreign friends/staff	13	6.84
Taking an English course conducted by experience English native teachers	6	3.16
Other	2	1.05

Table 2 reveals that over 80% of participants relied on themselves for English-language development using three main means on their own: self-studying through commercial books (33.16%), listening to English songs and watching soundtrack films (27.37%), and watching or listening to news or programs on television or radio (20.53%). The remainder reported that they developed their English through interaction with English-language instructors, English native speakers, and foreign friends/staff.

Table 3. Limitations of English Proficiency Improvement

Limitations of English Proficiency Improvement	Frequency	Percentage
Family responsibility	53	27.89
Time constraint	48	25.26
Course fees	38	20.00
English background knowledge	23	12.11
Commuting to study	22	11.58
Health problems	4	2.11
Others	2	1.05

Table 3 shows that three main constraints for the improvement of English proficiency were primarily related to family responsibility, time constraint, and course fees, respectively. Moreover, English background knowledge was also taken as another limitation for the improvement of their language proficiency.

Job Responsibilities and Impacts of English at Work

This section deals with the work that the participants were responsible for and particular aspects of English they needed to use at work. Table 4 and Table 5 show that most of the participants were engineers (45%) and engineering operators (32%). There were others (23%) whose job titles were not engineers or engineering operators. Two main departments in which the participants worked were Production Line (44%) and Process Planning (42%). The remainder worked in the Quality Assurance department (14%).

Table 4. Current Job Positions

Current Job Positions	Frequency	Percentage
Engineers (EN)	86	45.26
Engineering operators (EO)	61	32.11
Administrative staff (AS)	43	22.63

Table 5. Work Departments

Work Department	Frequency	Percentage
Production Line	84	44.21
Process Planning	79	41.58
Quality Assurance	27	14.21

As shown in Table 6,only 7% always used English in their daily life. The majority (over 90%) mentioned that they sometimes to never used English on a daily basis.

Table 6. Total Use of English in Daily Life

Total Use of English	Frequency	Percentage
Sometimes	73	38.42
Seldom	53	27.89
Never	50	26.32
Always	14	7.37

The results shown in Table 7 indicate that the staff considered that English proficiency played an important role in work advancement.

Table 7. English Proficiency and Its Impact on Work Advancement

English Proficiency and Its Impact on Work Advancement	Frequency	Percentage
Little	40	21.05
Fair	100	52.63
Strong	39	20.53
Tremendous	11	5.79

Accordingly, as shown in Table 8, three main opportunities were created as immediate benefits from satisfactory English ability involved the opportunities to: work at overseas plants, earn better pay, and be promoted to a higher position (78% total).

Table 8. Work Opportunities Resulted from Good English Ability

Work Opportunities Resulted from Good English Ability	Frequency	Percentage
Work in overseas plants	61	32.11
Earn better paid	45	23.68
Promoted to higher position	42	22.11
Attend overseas training	11	5.79
Start own business	8	4.21
Study abroad	8	4.21
Direct business contact	8	4.21
Others	7	3.68

The participants' attitudes on the importance of English language toward their work and career advancement can have a very strong impact on participants' motivation and success of the training module. These factors should be taken into consideration when designing an English training module for this particular group of learners.

English Language Communication Discourse of Engineers/Engineering Operators

Table 9 indicates that from the four-point rating scale, three main areas of English needs were three-fold: Technical English ($\bar{x}$ = 3.12), Business English ($\bar{x}$ = 3.07), and General English ($\bar{x}$ = 3.06). It should be noted that all three of these areas were rated at a high level.

Table 9. Contents Required in Your English Course

Content Required	Mean	S.D.
Technical English relating to your working situation	3.12	.82
Business English such as discussion, negotiation, giving oral presentation, attending meetings	3.07	.88
General English such as Greeting and Socializing	3.06	.84

Table 10 displays the results from the four-point rating scale regarding how often participants performed a list of 33 reading tasks. As can be seen, the participants needed to read a variety of texts as they reported that they performed nearly half of the reading tasks (item 1-16) more than the average score ($\bar{x}$=2.58). These tasks included instructions and signs, reports or notes of technical work or problems, manuals, tables, graphs and figures, and emails from customers/suppliers/professionals. It should be noted that these reading text types included both technical, business and general texts. There seems to be a wide range of reading texts involved in this group of participants.

Table 10. Reading Texts

Reading Tasks	Mean	S.D.
1. Instructions how to perform a job	2.87	.86
2. Reports of details of jobs done	2.81	.91
3. Emails circulates within the plant	2.79	.92
4. Equipment manuals	2.76	.85
5. Safety signs	2.74	.83
6. Analysis reports of problems	2.74	.90
7. Machine tools/gauges	2.73	.90
8. Tables	2.72	.91
9. Reports of technical notes	2.72	.94
10. Emails from customers/suppliers/professionals	2.72	.93
11. Labels	2.71	.85
12. Statistical data	2.67	.91
13. Notes/Messages	2.67	.87
14. Worksheets	2.66	.83
15. Graphs	2.63	.90
16. Company policy statements	2.62	.82
17. Business letters from customers/suppliers	2.58	.98
18. Minutes of meeting	2.56	.91
19. Online reading materials	2.56	.80
20. Technical drawing	2.56	.95
21. Reports of machine Status	2.55	.91
22. Technical texts	2.53	.85
23. Quotation documents	2.53	.92
24. Memorandums of existing situation	2.49	.77
25. Temperatures	2.46	.86
26. Journal articles	2.42	.84

27. Advice cards	2.39	.77
28. Business letters from professionals	2.38	.98
29. References	2.37	.82
30. Memorandums of materials requests	2.37	.84
31. Proposals	2.33	.86
32. Lubrication schedules	2.29	.81
33. Newspaper articles	2.23	.76
	$\bar{x}$=2.58	

However, the data from the interviews suggested that participants felt the reading tasks were not the problem because they could use online tools and sources for support, such as Google Translate. This may suggest the direction for the training of reading skill for lifelong learning. For example, the training module might need to focus on how to effectively use Google Translate for reading skill development.

Not so different from the reported reading text types but with less degree of occurrence, Table 11 reveals that participants reported that they performed a wide range of writing tasks as listed. The more common writing tasks include the following: writing emails, instruction and safety signs, tables, graphs and figures, labels, forms, work and problem reports, notes and messages, and manuals. It should be pointed out that these writing tasks were used for both internal and external communication. Some were related to technical work, while others were for business correspondence. Even though the writing tasks varied, most of these can be retrieved from the Internet in the form of ready-made templates. The training module may need to focus on how the participants could retrieve and make full use of these available sources.

Table 11. Writing-Skill Related Texts

Writing Tasks	Mean	S.D.
1. Emails circulates within the plant	2.67	.90
2. Instructions on how to perform job	2.66	.90
3. Analysis report of problems	2.63	.90
4. Reporting of details of job done	2.62	.88
5. Emails from customs/suppliers/ professionals	2.61	.90
6. Tables	2.56	.83
7. Safety signs	2.55	.84
8. Statistic data	2.55	.84
9. Graphs	2.54	.85
10. Notes/messages	2.53	.86
11. Reporting of technical notes	2.51	.94
12. Equipment manuals	2.48	.91
13. Memorandums of existing situations	2.46	.82
14. Minutes of meeting	2.46	.89
15. Worksheets	2.45	.86
16. Technical drawing	2.44	.87
17. Business letters from customers/suppliers	2.44	.92
18. Leave forms	2.42	.83
19. Labels	2.41	.90
20. Business letters from professionals	2.39	1.00
21. Company policy Statement	2.38	.81
22. Logbooks	2.38	.86
23. Reporting of machine status	2.36	.88
24. Quotation documents	2.33	.85
25. Proposal	2.33	.87
26. Timesheets	2.31	.84
27. Memorandums of materials requests	2.29	.80
28. Technical texts	2.28	.84
29. Journal articles	2.23	.82
30. Advice cards	2.20	.84
31. Shift reports	2.18	.89
32. Lubrication schedules	2.04	.82
	$\bar{x}$=2.4	

Table 12 shows the situations in which participants needed to converse in English at work. Most of the conversation situations listed were rated higher than average ($\bar{x}$= 2.00), except for the last situation, “Chair a meeting” ($\bar{x}$=1.85). Numbers were related in the forms of telling time and stating numbers. Participating in a discussion as well as describing figures and graphs were the top four conversation situations. Others were related to giving instruction and describing a machine and equipment. Apart from that, the conversation circumstances were related to everyday life situations, such as socializing and entertaining guests.

Table 12. English Conversation

Conversation Situations	Mean	S.D.
1. Tell the time	2.45	.82
2. Describe daily routine/ job responsibility	2.39	.84
3. Describe graphs/statistics/performance	2.38	.83
4. Describe numbers	2.35	.83
5. Give instructions	2.34	.92
6. Describe causes and effects of problems	2.32	.92
7. Describe possibility/probability/prediction/trend	2.31	.80
8. Make an oral presentation or a report	2.27	.92
9. Socialize and entertain foreign customers/professionals	2.24	.80
10. Express opinions	2.23	.85
11. Discuss problems and make final decisions	2.23	.92
12. Classify	2.21	.84
13. Define and clarify meaning	2.21	.89
14. Give advices to customers/staff	2.20	.87
15. Make a phone call	2.17	.81
16. Staff/supervisors/professionals/customers/suppliers	2.17	.84
17. Make an appointment	2.17	.90
18. Describe a machine/equipment	2.16	.86
19. Attend a meeting/seminar/conference	2.16	.88
20. Explain problems (faults) of machines/equipment	2.16	.87
21. Give and receive over the phone	2.09	.82
22. Explain procedures and cycles	2.06	.80
23. Chair a meeting	1.85	.79
	$\bar{x}$=2.22	

It should be emphasized that the virtue of conversation is that it is a real-time, face-to-face communication. This will need to be taken into consideration while designing the training module, especially when training is mainly carried out online.

Limitations of the Participants' English Proficiency

In this section, limitations of the participants' four language skills are reported. Table 13 shows the participants' speaking difficulty. From the four-point rating scale, it was revealed that the participants appeared to have difficulty relating to coping with the problems of real-time speaking. It was reported that participants were worrying about making a mistake while speaking ($\bar{x}$=2.91), and entering a discussion ($\bar{x}$=2.88). Other problems were related to not knowing how to say something ($\bar{x}$=2.85), wording in a real-time conversation ($\bar{x}$=2.84), and appropriateness in speaking ($\bar{x}$=2.82), while pronunciations ($\bar{x}$=2.79) and oral presentation ($\bar{x}$=2.68) were less problematic. It could be speculated that lack of effective communication strategies could be one of the main sources of problems for participants' real time speaking. Training in basic communication strategies may facilitate the conversation skill of this particular group of participants.

Table 13. Difficulty with Speaking Skills

Difficulty with Speaking Skills	Mean	S.D.
1. Worrying about saying something wrong in the case you make a mistake in the English	2.91	.77
2. Finding it difficult to enter discussion	2.88	.82
3. Not knowing how to say something in English	2.85	.81
4. Having trouble wording what you want to say quickly enough	2.84	.79
5. Not knowing the best way to say something in English	2.82	.79
6. Having difficulty with your pronunciation of words	2.79	.81
7. Having difficulty giving oral presentation	2.68	.74
	$\bar{x}$ =2.82	

Similar to speaking difficulty, Table 14 illustrates that from the four-point rating scale, listening was also problematic especially when listening to lengthy texts, presentations, discussions, and speeches. Problems also occurred when listening and taking notes. It should be emphasized that participants appeared to have difficulty with basic listening skills. The training module may need to include basic listening strategies for different kinds of tasks, such as listening for keywords and main idea, listening for specific information, listening for comprehension, and deriving effective note-taking from listening.

Table 14. Difficulty with Listening Skills

Difficulty with Listening Skills	Mean	S.D.
Having trouble understanding lengthy spoken texts	2.92	.78
Having trouble understanding presentation or discussion	2.72	.75
Having trouble understanding the subject matter of a talk, i.e., what is being talked about	2.68	.77
Having trouble taking notes while attending meeting/seminar/conference	2.65	.73

Table 15 sheds light on participants' problems with English writing. The participants reported their problems were both at local and global levels, including grammatical structures ($\bar{x}$=2.85), finding ideas ($\bar{x}$=2.81), and choices of words ($\bar{x}$=2.81). Surprisingly, the participants reported that spelling ($\bar{x}$= 2.70) was more problematic than organizing ideas in a paragraph ($\bar{x}$=2.67). Punctuation was found to be the least problematic ($\bar{x}$=2.55). Hence, materials for teaching of writing skills to these particular participants need to concentrate on expressing ideas both at a sentence and text level as well as punctuation. However, the data from the interviews pointed out that they did not think they had much trouble with writing at work, since they could seek writing support from different sources (e.g., the Internet and colleagues). Again, the training module should emphasize how the participants could make use of these available tools for their writing skill development. Nevertheless, relevant and effective feedback must be provided regularly.

Table 15. Difficulty with Writing Skills

Difficulty with Writing Skills	Mean	S.D.
Structuring sentences	2.85	.76
Finding ideas	2.81	.80
Using appropriate vocabulary	2.81	.76
Expressing ideas clearly	2.78	.82
Using correct spelling	2.70	.75
Organizing ideas in a paragraph	2.67	.82
Using correct punctuation, such as a comma	2.55	.83

Similar to the other skills, but to a lesser extent, reading appeared to be problematic with mean scores ranged between 2.71-2.51 as shown in Table 16. Reading a text quickly in order to establish a general idea of the content (skimming) appeared to be the most problematic ($\bar{x}$=2.74), followed by understanding special vocabulary in a text ($\bar{x}$=2.71), and guessing unknown words in a text ($\bar{x}$=2.70). Surprisingly, locating and understanding details was less problematic than recognizing text organization, understanding main ideas, and general comprehension. Being familiar with particular text types and reading strategies could affect participants' responses to the difficulty with reading skills. The training module should also introduce strategies for vocabulary enhancement, such as mind-mapping or games.

Table 16. Difficulty with Reading Skills

Difficulty with Reading Skills	Mean	S.D.
Reading a text quickly in order to establish a general idea of the content (skimming)	2.74	.87
Understanding special vocabulary in a text	2.71	.76
Guessing unknown words in a text	2.70	.82
Looking through a text quickly in order to locate specific information (scanning)	2.69	.82
Reading a text slowly and carefully in order to understand details of the text (comprehension)	2.63	.81
Understanding text organization such as defining and classifying things, or describing processes	2.62	.78
Understanding the main points of text	2.57	.79
General comprehension	2.51	.80

From the interview responses concerning needs in terms of the four English skills, listening and speaking seemed to be the most problematic followed by writing and reading, respectively. One of the main factors could relate to the participants' background, as well as their personal experiences and preferences. These particular factors should be paid attention to during the design of the materials and course. Therefore, the training module should take participants' demographic data, needs, job responsibilities, and constraints into consideration. An online training module may be one of the most effective means of English skill development for the engineering workforce.

Discussions and Recommendation

Nature of the Participants

1) Particular Characteristics

This group of participants included engineering operators (EO), engineers (EN), and administrative staff (AS). The majority were male, with ages ranging from 20 to 39. Their education ranged from below undergraduate to graduate. Most of them started English language learning at either kindergarten or primary levels. They reported having limited English language proficiency, especially speaking and listening skills. The skill they perform highest is reading. Other constraints when considering workplace training include individual factors such as personal work routine, time constraint, and financial restriction (Hart-Rawang, 2009).

2) Participants' Language Needs

From the findings, participants employed three main means: self-studying through commercial books, listening to English songs and watching soundtrack films, and watching or listening to news or programs on television or radio. This reflects the current lifestyle of English learners who spend most of their time using social media and entertainment. Unintentionally, they might have developed English proficiency through those relaxing activities in their free time. It is, therefore, interesting to utilize edutainment resources for English skill development with a learning goal, as well as learning English for pleasure with intrinsic motivation. Nonetheless, it was found that only motivation alone cannot lead to students' learning perseverance (Boekaerts, 2016; Gibbs & Poskitt, 2010). Moreover, the students can still be engaged, even though they are possibly reluctant to use self-regulatory strategies (Boekaerts, 2016).

From other research (Cakir, 2013; da Rocha Seixas, Gomes & de Melo Filho, 2016; Han & Finkelstein, 2013; Pellas, 2014), students' engagement increased when they use learning technologies. Yet, there is a relationship between engagement and learning; meaning that if learners have no engagement, they do not learn (Reeve, 2012). In addition, Reeve (2012) claimed that engagement may be a key learning factor that more effectively indicates learners' success, better than teacher instruction does. Development of materials to be used for promoting English language learning of these particular participants should take both technology and learning engagement into consideration.

Years of studying English language, how the participants were taught, and their experiences attending English training courses can all contribute to participants' perception toward their English-language proficiency and their individual English skills. It should be noted that participants all rated their English skills below average. Moreover, their main constraints related to personal limitations including family, time, and course fees. Even though they rarely or never experienced training abroad, their linguistic background knowledge was not one of their main drawbacks toward English-language learning. How the participants have experienced learning English, as well as personal limitations, factors that need to be taken into consideration when designing an English training module for the participants in this current study.

3) Differences among Participants

The recognition of opportunities to use English for advancement among engineering, engineering operators, and administrative staff were different and might be a result of organizational support. According to Cheep-Aranai et al. (2017), in some organizations there was no party responsible for an in-house language training module. However, in this study, few interviewees themselves accepted they would be able to join a language training module provided by employers due to the burden of being overloaded (EN1) as highlighted in the following extract from an interview:

> *Studying English at my workplace is difficult because there are no workers who can take over my job*. (EN1)

In addition, one of the interviewees (EN2) mentioned that they were not allowed to take leave for learning purposes outside of the factory because of a tight working schedule, as mentioned in the following extract:

> *My boss does not support the idea of me taking an English course outside of work.* (EN2)

In addition, AS1 and AS2 suggested they could not afford time to undertake the training module due to increased traveling expenses and delays in relevant working processes, such as customer service transactions and delivery timetables, as highlighted in the following interview extracts:

> *Travelling to study at a language school will cost too much money*. (AS1)

> *Customers may contact me to ask about delivery status at any time, so I can't join the class outside the factory*. (AS2)

For the researchers, due to the fact that more than half of all respondents agreed that English proficiency had an impact on their career advancement, the emphasis should be on enforcement of workplace policy in a practical way. In addition, relevant support should be provided to encourage the employees' English language development.

Suggested English Language Training Module

1) Content
The content should involve technical, business, and general areas. Reading, writing, conversation, listening and speaking skills should all be included in the training module, as shown in Table 17.

Table 17. Content of Training Module

Unit	Content	Tasks	Materials
1	First Meeting and Chit-chatting	Self-introduction Small talk	Game cards, Flinga
2	Socialization	Giving farewell speech	YouTube
3	Talking about Favorite Food	Speaking	YouTube
4	Saying it intelligibly!	Pronunciation	Online dictionary websites, music videos
5	Working in a Digital Factory	Searching for descriptions of technical terms	Google Translate, Kahoot
6	Reading at Work	Reading manuals, notices and memos	Technical texts on website

7	Business Visit	Presentation of organization, department and job responsibilities	Company's websites, YouTube, company's annual report
8	Products and Sales	Presentation of products	Microsoft PowerPoint
9	Email Correspondence	Writing emails	Business email templates, concordance (open database)

2) Possible Medium of Instruction

Participants should be exposed to realistic English language contexts. It is strongly recommended to make use of authentic materials and situations in the workplace (Cheep-Aranai et al., 2017). The learners may be assigned to complete work-related tasks. The task-based approach can be a beneficial way to develop English skills of participants. Materials used depend on the specific purpose and situations required in each field. For instance, the executives tend to need presentation skills for business purposes, while operators are more involved with reading concerned texts such as manuals and notice.

Because of their time limitation, personal constraints, and the fact that some participants did not recognize the significant impact of English skills on their work promotion, learning autonomy should be promoted.

3) Learning Activity and Personal Preference

Self-learning through entertainment platforms should be emphasized. One of the interviewees (EN2) mentioned that, at their workplace, the company also considered providing employees with online learning packages at their convenience. Nonetheless, this alternative may not agree with employees, as they are required to pay an additional fee for the Internet service and electricity. The recommended tasks for developing oral skills of engineers include group meetings and public speaking.

4) Making Use of Language through Online Edutainment

Listening to songs, reading news, watching movies, using social media (e.g., Facebook, Line, Twitter and Instagram), online shopping, and playing online games are all interactive tasks requiring both the players' language repertoire and their digital literacy skills. During the learning process, online applications, such as Flinga and Kahoot, serve as alternative media allowing users to develop English vocabulary, grammar, and other language skills through enjoyable, interactive, and competitive experiences.

Suggested Guideline for Further Development

The researchers suggest that learners should spend one hour maximum per day and on average three days a week for each unit. Besides the contents and materials, successful self-learning requires support from the employees' organization, as well as their own motivation, intrinsic and extrinsic.

To sustain learners' motivation, self-evaluating tools, such as rating scales, pre/post-tests, mind-mapping, and checklist report, can be used. This means that the self-learning instruction should be given at the very beginning of the module and the pre-test should be employed to examine the learners' English proficiency background. Furthermore, teachers can play an important role to facilitate and give feedback to learners for learning development.

Nevertheless, the adult learners in workplaces may need to contact teachers via social media applications, instead of face-to-face communication, because of time limitations and transportation costs. These days, one of the popular online platforms (particularly among Thai users) is Line, which provides services in the forms of verbal texts, photos and animation, emoticons, files, video clips, and so on. These functions can appropriately serve as learning activities throughout the module. The researchers, therefore, recommend Line as a means of teacher-learner interaction during the self-learning period.

Conclusion

The findings revealed that engineers, engineering operators, and administrative staff at Phra Nakhon Si Ayutthaya and Pathum Thani manufacturing companies needed to learn English language for general as well as work-related purposes relying on all four skills. Moreover, the learners' lifestyles involved with social media support their daily communication and self-learning. Meanwhile, their constraints relating to time, job demand, and finance influenced the participants' needs to learn English, either in or out of the workplace.

More importantly, learning activities should contain senses of fun and relaxation. These require public, audio-visual materials, such as video clips, songs, and movies on YouTube, English websites, and online games. The researchers suggest that the suitable module should include self-learning with available online tools and teachers as facilitators, while the learners are developing and self-assessing their English language performances. However, all of the contents and tasks need to be designed with regard to authenticity of language use in order to ensure learners' engagement and enhance their learning motivation.

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TOEIC Reading Section: Evaluation of the Four Cardinal Criteria for Testing a Test

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Abstract

The Test of English for International Communication (TOEIC) has been widely-used to measure English proficiency over decades. Despite being commonly accepted, there are some controversial issues concerning the correlation between English language ability and TOEIC scores. This paper evaluates the TOEIC Reading section of the TOEIC Listening and Reading test in terms of the four major principles of language assessment: validity, reliability, authenticity, and practicality. The evaluation in this paper is based on the TOEIC Sample test and the TOEIC Examinee Handbook. The evaluation revealed that the TOEIC Reading test shows a certain level of validity and reliability. Moreover, the test is in agreement with authenticity as the language used is natural and somehow related to real-life situations. However, interactiveness and contextualization should be taken into consideration. Additionally, the test has strong practicality due to its sufficient resources used. Finally, some examples of alternative test types are provided.

Keywords: TOEIC, reading, testing, test evaluation

Introduction

Across the world, testing is considered as a method of assessment techniques to estimate or measure the level of a learner's ability, and knowledge or performance in a given domain (Brown & Abeywickrama, 2010; Mousavi, 2009). Concerning language ability, language tests are being used to measure test-takers' achievement. Creating an appropriate and well-constructed test is a complex task, as it requires a variety of aspects to be considered. According to Brown and Abeywickrama (2010), some of the characteristics of an effective, appropriate, and useful test are validity, reliability, authenticity, and practicality. The reasons why a good test requires the aforementioned cardinal principles will be demonstrated in Principles of Language Assessment section.

The Test of English for International Communication (TOEIC), has been one of the most widely-used language tests and most reliable measures of English proficiency over a decade (Educational Testing Services, 2005). According to ETS Examinee Handbook (2015), "the TOEIC test is an English-language proficiency test measuring the everyday English skills and indicating how well people can communicate in English with others in real-life situations" (p. 2). The TOEIC scores are mainly used for both educational and vocational purposes. To illustrate with regard to educational purposes, many educational institutions, especially in non-native English-speaking countries, trust TOEIC scores to inform the decisions of screening their perspective students (Bresnihan, 2012). To elaborate in terms of vocational purposes, achieving a TOEIC qualification will be beneficial as many companies increasingly use TOEIC scores as a gatekeeper to make decisions on hiring perspective employees whose scores meet the pre-determined requirement, as well as use TOEIC when considering promotion of employees (Oliver & Tannenbaum, 2017; Tsuda, 2003).

However, there have been controversial views on TOEIC. Some studies have investigated whether the test-takers' TOEIC scores and their language abilities are correlated or not (Cunningham, 2002; Herriman, 2004). The results revealed that "a correlation neither exists between TOEIC scores and English abilities nor between TOEIC scores gains and improved communicative competence" as its name suggests (Cunningham, 2002, pp. 57-60). This result leads to the questions of what TOEIC actually tests, and of how a test can predict the ability to use communicative skills. To address this concern, the evaluation of principles of four cardinal criteria – validity, reliability, authenticity, and practicality – TOEIC constitutes will be discussed in Principles of Language Assessment section.

In this paper, the TOEIC Reading section of its Listening and Reading test is the main focus. The data in this paper was based the TOEIC Sample Test and the TOEIC Examinee Handbook which can be downloaded from the Educational Testing Service Website. First, an overview of TOEIC will be introduced, followed by an evaluation of the principles of validity, reliability, authenticity, and practicality of the TOEIC Reading section. Finally, a discussion of the skills tested by the item types and test formats used in the TOEIC Reading section will be presented.

Overview of TOEIC

The TOEIC test is "an English-language proficiency test for people whose native languages are not English" (Educational Testing Services [ETS], 2015, p. 2). Generally, the TOEIC test does not require specialized knowledge of English beyond people's English in their everyday life as the tests are designed "to measure everyday English skills used in the business environment and workplace" (Powers & Powers, 2015, p. 152). Originally, the TOEIC test was first used in Japan in the late 1970s and then has spread rapidly throughout the world (Herriman, 2004; Powers & Powers, 2015). The TOEIC test is administered by ETS. Due to its multiple purposes, TOEIC scores can be used for educational placement, to measure the progress in English proficiency levels of students in schools, and job recruitment or position promotion within companies.

Structure of TOEIC

According to Liu and Costanzo (2013), “the TOEIC Listening and Reading test is a paper-and-pencil-based test” and “is administered in secure test centres or through accredited institutions” (p. 1). The TOEIC test is a multiple-choice test and comprises 200 questions divided into two sections: Listening section and Reading section. Each part contains 100 questions. Scores range from 5-495 marks in each part, and 990 marks altogether.

In the Listening section, test-takers are tested on how well they understand spoken English. The test-takers will need to answer the questions based on a variety statements, questions, conversations, and talks recorded in English. In the Reading section, test-takers will be tested on how well they understand written English including three parts: Incomplete Sentence, Text Completion, and Reading Comprehension. The elements of the TOEIC Reading section in the TOEIC Listening and Reading test is summarized in Table 1.

Table 1. Composition of the TOEIC Reading section

Section	Item types	Number of items	Claims
Reading	Incomplete sentences	40	1. Make inferences in written texts
	Text completion	12	
	Reading comprehension		2. Locate and understand specific information in written texts
	- Single passage	28	
	- Double passage	20	3. Connect information across multiple sentences in written texts
			4. Understand vocabulary in workplace texts
			5. Understand grammar in workplace texts

TOEIC Reading Section

In the TOEIC Reading section, there are three major parts as shown in Table 1. The first part contains 40 multiple-choice questions of discrete sentence-length gap-filling exercises. In this part, recognition of grammatical rules and vocabulary are tested. In the second part, there will be texts with gaps to be filled. In each text, there are 3 to 4 multiple-choice questions. Both grammar and vocabulary are also tested in this part. In the final part, there are 48 questions on a number of texts testing reading comprehension. For Single passages, there are 28 questions with 7 to 10 reading texts and 2 to 5 questions each. For Double passages, there are 20 questions with 4 pairs of reading texts with 5 questions per pair.

According to ETS (2016), the sample test indicates that the test-takers "will read a variety of texts and answer several different types of reading comprehension" (p. 10). For time allocation, the entire Reading section will last 75 minutes.

In short, test-takers will be evaluated in their ability to use English grammar and vocabulary in a relatively formal manner (Gilfert, 1996; Trew, 2008). Business letters, short news items, and advertisements are used as stimuli in the readings, as TOEIC is claimed to be used in the business environment and workplace.

Principles of Language Assessment

Due to the number of controversial views on the quality of the TOEIC test (Cunningham, 2002; Herriman, 2004; Lawson, 2008), this section aims to examine and evaluate the TOEIC Reading section based on "the four major principles for testing a test" (Brown, 2001, p. 385). The four major principles of language assessment will be first briefly defined and discussed in relation to how four major principles of language assessment are applied to TOEIC.

Validity and TOEIC

To raise the quality of a test, validity is conceivably one of the most significant and fundamental criteria. According to Brown and Lee (2015), validity is the extent to which the test accurately measures what it is intended to measure, or how well a test measures what it is supposed to measure. In other words, "do the scores mean what we think they mean, and does the test fulfil the purpose for which it was designed?" (Powers, 2010, p. 1). A valid test of reading ability literally measures reading ability. It is best to validate a test in as many ways as possible (Alderson et al., 1995).

A common controversial view and criticism of TOEIC is that it fails to assess the communicative competency as its full name suggests. When the test fails to assess what it is supposed to measure, it becomes invalid as measures of proficiency in the real world (Brown, 2001). A number of researchers have questioned the validity of TOEIC on this aspect (Cunningham, 2002; Douglas, 2000; Herriman, 2004; Lawson, 2008; O'Sullivan, 2006). A detailed explanation will be demonstrated in each type of the validity.

Content Validity

Content validity is concerned with whether the test covers a fully representative sample of the theoretical construct, or statement of test specifications or not. To illustrate, the test must be representative of that content specified in the test specifications or test blueprints. For instance, if we want to test a test-taker's finding main idea skills, the tests should consist of the questions that allow the test-taker to find the main ideas of the reading passages.

According to ETS (2015), it is claimed that TOEIC measures English communication skills in a business context. Concerning solely content validity of TOEIC, it is necessary to compare the TOEIC test forms with its test specifications. A study on ensuring validity as TOEIC is being developed conducted by Powers (2010) reveals that "very thorough and detailed test specifications are followed to ensure that the right content is covered" (p. 5). To elaborate from the aforementioned claim, for the TOEIC items, each and every test question is reviewed by some 20 reviewers before it is used to assure the right content. However, the TOEIC full specifications are not available and accessible. There is no information about what specific abilities and specific content TOEIC is intended to measure. Ostensibly, the detailed test specifications are a confidential and proprietary ETS document.

Looking through the test sample (Extract 1 and Extract 2), the questions tend to use business terms such as *company*, *business analyst*, *sales*, and *department*.

102. Jamal Nawzad has received top performance reviews ______ he joined the sales department two years ago.

(A) despite

(B) except

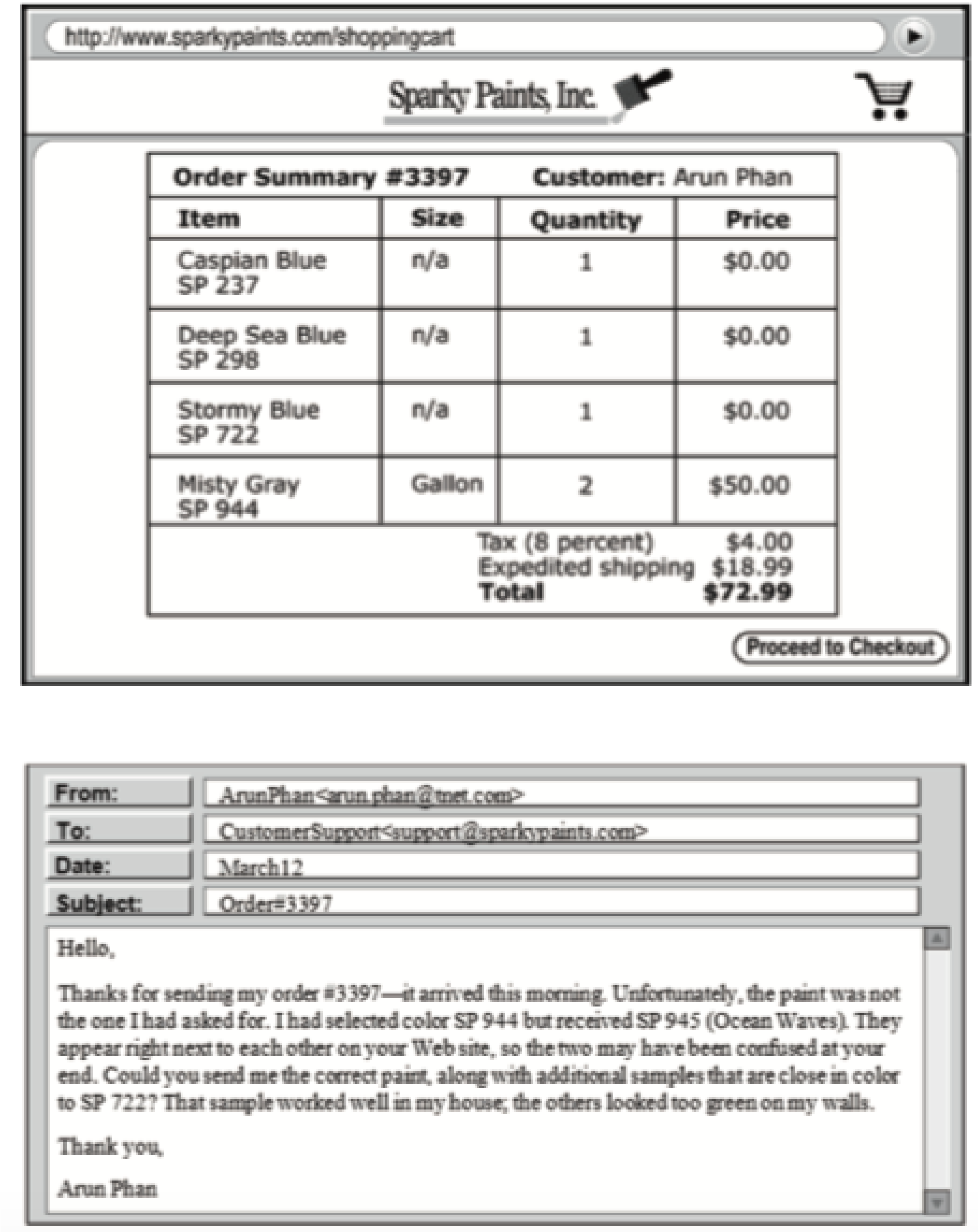
(C) since

(d) during

104. Among ________ recognized at the company awards ceremony were senior business analyst Natalie Obi and sales associate Peter Comeau.

Extract 1. Test Sample

Regarding the content in this Incomplete Sentences part, grammar rules are mostly tested. However, the TOEIC reading extract (Extract 2) is related to business such as emails, magazines, letters, advertisements, and memoranda.



http://www.sparkypaints.com/shoppingcart

Sparky Paints, Inc.

Order Summary #3397		Customer: Arun Phan	
Item	**Size**	**Quantity**	**Price**
Caspian Blue SP 237	n/a	1	$0.00
Deep Sea Blue SP 298	n/a	1	$0.00
Stormy Blue SP 722	n/a	1	$0.00
Misty Gray SP 944	Gallon	2	$50.00
		Tax (8 percent)	$4.00
		Expedited shipping	$18.99
		Total	**$72.99**

Proceed to Checkout

From: ArunPhan<arun.phan@tnet.com>
To: CustomerSupport<support@sparkypaints.com>
Date: March12
Subject: Order#3397

Hello,

Thanks for sending my order #3397—it arrived this morning. Unfortunately, the paint was not the one I had asked for. I had selected color SP 944 but received SP 945 (Ocean Waves). They appear right next to each other on your Web site, so the two may have been confused at your end. Could you send me the correct paint, along with additional samples that are close in color to SP 722? That sample worked well in my house; the others looked too green on my walls.

Thank you,

Arun Phan

Extract 2. TOEIC Reading extract

Regarding the claim about TOEIC made by ETS stating that "TOEIC measures English skills in a business context," the content validity apparently exists according to some extracts from the test sample although some reading tasks may not engage the test takers in any genuine way which will be later discussed in Authenticity section.

Criterion-related Validity

Another evidence of validity that needs to be concerned as it ensures that the test gives the same results as another independent and reliable assessment of the test-taker's ability is called "criterion-related validity" (Hughes, 2003, p. 27). To define it, a criterion-related validity refers to "the extent to which the 'criterion' of the test has actually been reached" (Brown & Abeywickrama, 2010, p. 24). There are two forms of criterion-related validity: concurrent validity and predictive validity (Brown & Abeywickrama, 2010; Hughes, 2003). First, concurrent validity is when the results of the test are agreed with another independent and highly dependable second assessment method. Second, predictive validity considers how well and accurately the test can predict the test-takers' future performance.

In terms of predictive validity, according to Duke (2006), it is claimed that "the TOEIC test assesses how valid that knowledge in the real world, that is, it tests for a more authentic processing capacity" (p. 4). To elaborate, the TOEIC test is more than a sole knowledge test. At the back of the TOEIC score report, there are score interpretations about test-takers' abilities into a specific decision category and the test-taker's abilities measured (ETS, 2015). To illustrate, the test scores report indicates what performances or levels a test-taker possesses in such scores and equivalent opportunities to demonstrate a test-taker's ability, or how well the TOEIC scores relate to on-the-job performance for jobs that require English skills. However, predictive validity is difficult to deal with owing to many factors involved making it difficult to measure (Nicholson, 2015).

In terms of concurrent validity, to correlate TOEIC with other English proficiency tests seems to be beyond the bounds of possibility on grounds of the different test constructs. To clarify, comparing TOEIC with TOEFL is likely to be inappropriate as TOEIC tests for English in the global workplace while TOEFL tests for academic purposes (Niall, 2004). Reading in TOEIC mainly focuses on business context, while reading in TOEFL tends to focus on broad-spectrum and comprehensive academic passages. In other words, according to Liao, Qu, and Morgan (2010), "each test measures distinct aspects that cannot be assessed and compared by the other tests" (p. 11).

Construct Validity

Another one of the validity categories is construct validity. Construct validity deals with "the level of accuracy a construct within a test believed to measure" (Hughes, 2003, p. 26). To elaborate on a construct, it is a model, theory, proficiency, ability, or skill that attempts to explain observed phenomena existed in practice (Thatcher, 2010). For example, "overall reading proficiency" is a linguistic construct seeing that it exists in theory. Accordingly, a test of reading proficiency should tap into whatever theoretical construct is defined for "reading proficiency" (Brown & Lee, 2015).

ETS claims that "The TOEIC Listening and Reading test measures English ability to communicate with others in business, commerce and industry in an international environment" (p. 3). However, the TOEIC Examinee Handbook does not identify the theoretical explanation of the aspects tested. Moreover, an empirical study on a review of the reading section of TOEIC conducted by Suzuki and Daza (2004) demonstrates that "the TOEIC test makers do not show the construct validity of each section separately" (p. 17). TOEIC does not seem to have a theoretical description for its discrete multiple-choice format. In the real-life setting, being comprehensible or the state of being able to be understood plays an important role in international communication, especially in actual daily life. Based on the Reading section on the test sample (Extract 3), answering A or C may not be a critical or serious error in respect of comprehension in a real-life setting.

Because the equipment is very delicate, it must be handled with _________.

(A) careful
(B) caring
(C) carefully
(D) care

Extract 3. Test Sample

In terms of communicative language, the Reading section in TOEIC seems largely to demonstrate the lack of a communicative construct as a consequence of the fact that only a multiple-choice test is used (Douglas, 2000). However, more research studies are needed to help to establish what constructs for the TOEIC are; otherwise, it is difficult to criticize and evaluate the construct validity of the TOEIC test on account of unknown defined constructs (Chapman, 2003). Another way to help criticize and evaluate the construct validity of TOEIC is that ETS should provide a definition of the theoretical construct of communicative abilities that the TOEIC test purports to measure (Nicholson, 2015). Notwithstanding, ETS has tried to support its construct validity of TOEIC through criterion-related validity, which is discussed in Criterion-related Validity section.

Face Validity

Another important validity is the extent to which test-takers "view the assessment as fair, relevant, and useful for improving learning" (Gronlund, 1998, p. 210). This form of validity is known as face validity. However, face validity is something that cannot be tested by a testing expert because it is a factor of the "eye of the beholder" (Brown & Abeywickrama, 2010, p. 27).

There is some evidence showing what a test-taker considers in terms of fairness, relevance, or do-ability of a test. First, tasks in a test should appear to relate to the test description (content validity). Second, there should be a possibility to do the tasks in the test within the time limits. Third, the test items and instructions should be clear and in well-constructed format. Finally, the test should be at a reasonable level of challenge, that is, not too difficult nor too easy.

In terms of face validity of the Reading section in the TOEIC test, the test appears to obtain a remarkably high level of face validity and the test has been well-marketed in many companies (Lawson, 2008). Some of the difficulties a test-taker faces when doing the TOEIC test are “dullness of texts caused by the text nature” and “a fairly large number of original written texts and asking relatively few questions per passage” (Miyata, 2004, p. 67). These aforementioned difficulties lead to the second evidence mentioned in the previous paragraph saying that it should be possible to do the test within the time limits. When there are a considerable number of original written texts to read and only few questions to answer, it causes anxiety and discouragement to test-takers and also reduces the level of face validity (Newfields, 2005). This also causes a negative washback effect, as test-takers would rather learn the trick of the test in order to achieve high marks than study for the actual and meaningful language learning. When the test-takers know only tricks of the test without a comprehensive and genuine understanding of the language, they could have a lack of communicative abilities as stated in the TOEIC test description. However, according to some studies on testing TOEIC (Lawson, 2008; Rebuck, 2003), TOEIC face validity is still remarkably high among companies and universities.

Reliability

Focusing solely on validity could not conclude that a test can fully be a measure of language proficiency. Reliability is also a significant issue. Apart from validity, reliability measures consistency, precision, repeatability, and dependability (Chakrabartty, 2013). To illustrate, the test should yield similar results when same students or matched students are given the same test on two different occasions. To achieve reliability, a test requires uniform rubrics and clear directions for scoring (Brown & Abeywickrama, 2010). However, test designers commonly attempt to design tests yielding similar results when administering the tests on different occasions despite the fact that it is difficult to have completely reliable tests (Hughes, 2003).

According to Bachman and Palmer (2010), reliability depends upon three major factors: (1) Test Method Facets, (2) Personal Attributes, and (3) Random Factors. To elaborate on the Test Method Facets, there are some specific concerns: testing environment, test rubric, input, expected response, and relationship between input and expected response. Another factor is Personal Attributes such as age, gender, cognitive style, and background. The final factor which is Random Factors such as tiredness and emotional condition also plays a significant role in ensuring test reliability (Bachman, 1990; Karim & Haq, 2014). Factor 1 (Test Method Facet) seems to be systematic. To illustrate, every test-taker is exposed to the same test method facets. Hughes (2003) demonstrated that the test is said to be reliable if the test measures consistently. To elaborate, reliability implies that a test-taker would yield a similar score whether or not they do the test on a different day, or in a different setting.

Regarding reliability, without it, TOEIC would not be valid. ETS (2015) illustrates in the Examinee Handbook that “the type of reliability used is reported as an internal consistency measure using the KR-20 reliability index” (p. 22). To clarify, the KR-20 reliability index assesses the extent to which all items measure the same construct. Concerning the KR-20 reliability index, it is “used to calculate the internal consistency of a scale as a reliability index” (Tan, 2009, p. 103). ETS also demonstrates that “the reliability of the TOEIC scores across all forms from our norming samples has been 0.90 and up” (p. 22).

It is clear that TOEIC is a highly standardized test and appears to be a reliable test. In terms of Test Method Facets, the TOEIC tests provide clear instructions in every part of the Reading section. In the Examinee Handbook (2018), there are sufficient rules and regulations provided for the examinees who are going to take the test. There is sufficient staff in the testing rooms to help provide assistance when needed. From the aforementioned statements, this well-standardized and well-administered test can lend a certain degree of reliability to the TOEIC test. Additionally, the TOEIC test is marked by computer software which offers high scorer reliability.

Another concern is Personal Attributes. One of the threats to reliability lies in test familiarity. Studying the test and employing test-wiseness strategies are some ways of increasing test familiarity. Concerning a test-wiseness strategy, it is the strategy used to eliminate the wrong options in test items and to select a correct option without really understanding it at all (Cohen, 2012). In the Reading section, a test-taker could learn the tricks to do the TOEIC test without even reading the whole questions or the whole texts but by only spotting what is likely to be the answer. Taking a preparation course to learn the tricks without knowing how to use the language and not improving communicative competence are considered as threats to reliability, as a consistent and true measurement of language abilities has been reduced (Thomson, 2012).

Thus, the TOEIC test may be unreliable based on Personal Attributes, as a test-taker could improve their TOEIC scores without improving their actual overall language ability.

Authenticity

Authenticity is one of the major principles in language testing, but its concept is ddifficult to define. Bachman and Palmer (2010) define authenticity as “the degree of correspondence of the characteristics of a given language test task to the features of a target language task" (p. 23). Brown and Abeywickrama (2010, p. 28) considered authenticity in the following elements: (1) the language in the test should be as natural as possible; (2) topics should be meaningful, relevant, and interesting for the test-takers; (3) tasks should represent, or closely approximate, real-world tasks; and (4) the items should be contextualized.

As the TOEIC test tends to measure English ability in business settings, the test in the TOEIC Reading section corresponds to the first element of authenticity, which is that the language should be as natural as possible. As seen in Extract 4 and Extract 5, the text is from daily life. People tend to use coupons or read notices in their daily life. Furthermore, the extracts in the TOEIC Reading section are mostly meaningful because they relate to the business context as claimed in the TOEIC test description. Thus, it can be said that the TOEIC Reading test is somewhat authentic.

Extract 4. Advertisement Excerpted from the Test Sample

Extract 5. Notice Excerpted from the Examinee Handbook

However, it is claimed that the higher the level of interaction in a test is, the higher the authenticity should be. Then interactiveness has become an issue in the TOEIC test because language skills tested in TOEIC are tested indirectly, examining only receptive skills. Moreover, the test items in the TOEIC Reading section are seemingly decontextualized. The items in the decontextualized tests take the test-takers into different topic areas. Given the constraints of a multiple-choice format, in terms of authenticity, the test could achieve a modicum of authenticity more when the test items are contextualized. Moreover, if compared to a number of texts, test time is not appropriate which can lead to inauthenticity as we do not read a number of texts in a restricted time in real life.

Practicality

Regarding practicality, an effective test is practical. According to Bachman and Palmer (2010), practicality includes three main different types of resources to consider: (1) Human resources, (2) Material resources, and (3) Time. To clarify, practicality refers to the economy of time, effort, and money, and the consideration of man-power, financial limitation, time constraints, ease of administration, and scoring and evaluation. According to Bachman and Palmer (2010), an equation of practicality is shown in Figure 1.

$$Practicality = \frac{Available\ resources}{Required\ resources}$$

If practicality ≥ 1, the test development and use is practical.
If the practicality < 1, the test development and use is not practical.

Figure 1. Practicality (Bachman & Palmer, 2010, p. 36)

Evaluating the TOEIC test, there are some strengths that lie in TOEIC's practicality. First, the answer sheets are easy to mark because they are computer-marked and the answers are either correct and incorrect. From this reason, it could help save financial costs in terms of hiring markers and providing quick results. Another reason is that the test lasts only two hours and the test is entirely a multiple-choice test allowing test-takers to be tested simultaneously. From this reason, the test-takers do not have to spend much of time in the testing room doing the test.

However, it is argued in Face Validity section that limited time can be problematic in terms of the considerable number of texts in the Reading section. To deal with this previously mentioned problem, test-takers should plan well on doing the test. Another argument regarding the TOEIC test is that a multiple-choice test is quick to do and mark but it is not a good test for measuring a communicative competence which is stated in the TOEIC test description.

Discussion on Skills Tested

Restating the TOEIC test description, TOEIC is a two-hour multiple-choice test which comprises 200 questions divided into two sections: Listening section and Reading section. This paper will mainly focus on the Reading section. On the whole, the Reading section includes three parts as clarified in Structure of TOEIC section.

As frequently mentioned, the TOEIC test is multiple-choice. It is widely supported that "the two principles that stand out in support of multiple-choice formats are practicality and reliability" (Brown & Abeywickrama, 2010, p. 55). With its predetermined correct responses and time-saving marking procedures, a multiple-choice test is mainly used in large-scale standardized testing. However, Hughes (2003) argued that there are a number of weaknesses of multiple-choice items that may need to be considered. First, test-takers may be encouraged to guess because there will always be one right option, and they receive credit for things they do not know. Guessing may have a considerable effect on test scores and the test may not be able to measure real abilities and performances of test-takers. Another weakness is that a multiple-choice test does not allow test takers to demonstrate their knowledge beyond the options provided. According to McAllister and Guidice (2012), "if the test-takers read the question carefully, the answer is easy to recognize even if they know little about that subject" (p. 194). This type of test items can test only recognition knowledge.

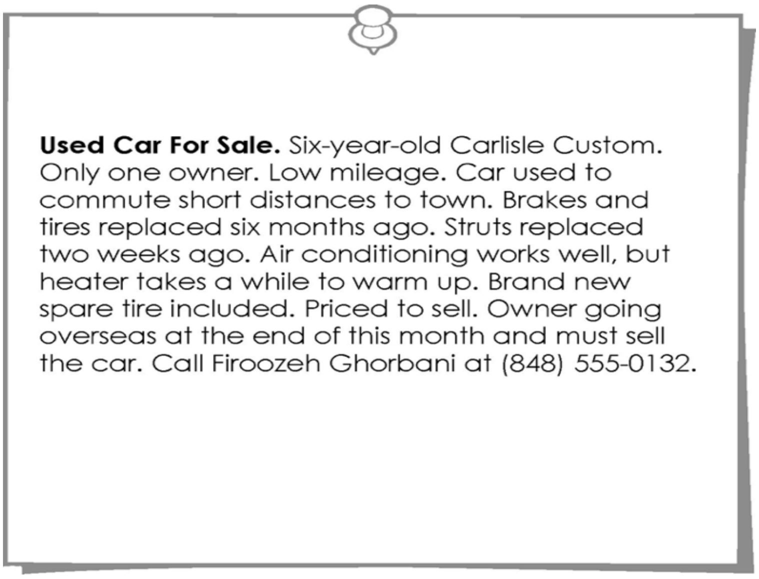
There are three main test formats in the TOEIC Reading section: (1) Incomplete sentences, (2) Text completion, and (3) Reading comprehension. Considering the test sample, incomplete sentence and text completion tasks test mainly grammatical rules and vocabulary. To be able to complete these tasks, the test-takers need to have a "writing skill" and "reading skill." In terms of writing skill tested, the test-takers are provided with exposure to the sentence and expository structures and then tested regarding their ability to correctly complete the sentences. In addition to writing skill that is tested, reading skill plays a crucial role in the TOEIC Reading section. As named the Reading section, test-takers are tested on the ability to read and comprehend the texts so that they will be able to answer the questions correctly. This test aims to test if test-takers can make inferences based on the texts, locate and understand specific information in the texts, and connect information across multiple sentences in the texts.

Alternative Item Types

After the evaluation of the principles of language testing and discussion about skills tested, the alternative item types of the TOEIC Reading section will be presented.

Directions: In this part you will read a selection of texts, such as magazine and newspaper articles, e-mails, and instant messages. Each text or set of text is followed by several questions. Select the best answer for each question and mark the letter (A), (B), (C), or (D) on your answer sheet.

Questions 141 refers to the following advertisement.



Extract 6. Excerpted Advertisement

141. What is true about the car?
   (A) It has been used for a decade.
   (B) Its heater does not seem to work.
   (C) It has been regularly checked.
   (D) Its spare tire is available to use.

The correct answer is (D), as it is stated in the seventh line of the advertisement.

Question 142 refers to the following advertisement and email.

http://www.businessaudiopro.com

Business Audio Pro

Enhance Your Company's Image with a Professionally Recorded Telephone Greeting

A professional, personalized voicemail message creates an excellent first impression. **Business Audio Pro** meets your specifications to record a customized telephone greeting within three business days!

Services We Offer:

1. **Professional Voice Talent for Voicemail Messages**–We have numerous male and female voice actors with a wide range of tones, accents, and dialects. Visit businessaudiopro.com to hear examples of what each actor sounds like and choose the one that best suits your needs.
2. **On-Hold Messages**–We also create professional on-hold messages with pleasant music to enhance your customers' experience.
3. **Customized Script Writing**–Our experienced script writers can help you craft a personalized message that distinguishes you and your business.
4. **Multilingual Voice Production**–For those with a multilingual customer base, we offer services in a wide range of languages.

Send us an e-mail (inquiry@businessaudiopro.com) with your contact information and your specific needs. A representative will call you within 24 hours to discuss your project and provide a price estimate.

To:	inquiry@businessaudiopro.com
From:	j.annesly@anneslydata.com
Date:	June 25
Subject:	Request

I found your notice in the newspaper and wish to use your services for my data-processing and transcription business. I am looking specifically for a professionally recorded voicemail greeting intended for my clients, and I wonder if you would be available to write and record this for me, and how soon. Since I work with English- and Spanish-speaking clients, I would like the message to be recorded in both languages. Please reach out to me at my mobile phone between the hours of 10:00 A.M. and 5:00 P.M. I hope to hear from you soon.

Thank you,

Jody Annesly
Annesly Data
512-555-6879 (mobile)
342 Maymill Road, Fort Worth, TX 70609

Extract 7. Excerpted Texts

142. What does Ms. Annesly ask Business Audio Pro?

(A) When is likely to be ready to offer the services?
(B) What languages are provided in the services?
(C) What messages can the company write for her?
(D) When will the representative contact her back?

The correct answer is (A), as it is stated in the fourth line of the email.

To justify these items, the major principles of language testing are needed. In terms of validity, it is valid to measure "reading" ability. The question tests reading comprehension ability, so the test-takers are required to be able to comprehend the texts in order to answer the question correctly. The content is related to business context as it is supposed to be. Concerning reliability, there are clear directions on the test as stated by Brown and Abeywickrama (2010). The stem is clear and there is no dominant option that could lead to easily elimination of the choices or guess the answer. Moreover, a multiple-choice test shows a certain degree of reliability because of its predetermined correct response. Regarding authenticity, the texts and question are related to real-life setting. To elaborate, we normally read advertisements in our daily life.

Suggestions

After the evaluation of the TOEIC Reading section according to the four principles, there are several suggestions to improve the test. Regarding reliability discussed in the discussion part, multiple-choice questions with their predetermined correct responses along with precise directions provide a certain level of reliability. However, a multiple-choice question may result in guessing among test-takers which affects the measurement of a test-taker's ability and real performance. To remedy this, it is the suggestion of this researcher that there should be *two correct* answers in a question. To elaborate, this leads to a decrease in chances of guessing the only one correct answer as test-takers are supposed to choose two correct answers to earn points. Hence, the actual performance and ability of a test-taker is truly measured.

Concerning validity, it seems to be rather high among the four principles. However, the construct validity of the TOEIC Reading section is difficult to measure and evaluate because the detailed test specification of TOEIC is confidential. Therefore, there is no information regarding what specific abilities and specific content TOEIC is intended to measure. Another principle is authenticity. Language use in TOEIC is comparatively authentic, as most of the language is based on language used in daily life and a business context. However, there seems to be a high number of reading passages despite the fact that people do not ordinarily read that many passages in the limited time given. Thus, this researcher suggests that ETS should decrease the number of test items and reading passages, and make the reading passages more contextualized in each area. Last, the practicality of the TOEIC Reading section is relatively strong. Thus, there are no suggestions for the improvement of practicality.

Conclusion

In the development and use of language proficiency tests, some of the basic principles of language testing, that is validity, reliability, authenticity, and practicality, are significant qualities to consider. In summary, the TOEIC Reading test shows a certain level of validity. However, there are some arguments on validity. There is no information about what specific content TOEIC is intended to measure, so it is difficult to test and evaluate content validity. In terms of criterion-related validity, predictive validity refers to how scores are interpreted to demonstrate a test-taker's ability or how well the TOEIC scores relate to job performances. Yet, it is still difficult to test and evaluate due to many other factors involved. Different test constructs when compared to other English proficiency tests are problematic to concurrent validity, as each test measures distinct aspects. Concerning construct validity, problems arise because of unknown defined constructs in the test specification. Face validity seems to obtain a high level of face validity, because the test has been well-marketed in workplace settings and consists of well-constructed item formats.

Moreover, reliability is another factor to consider. Overall, the TOEIC Reading test is reliable. Sufficient rules and regulations, along with precise directions, good test administration, and computer-marking, provide a certain degree of reliability to the TOEIC Reading test, while some personal attributes may cause unreliability because of not improving the actual overall language ability. Furthermore, the test tends to measure English ability in business settings. Hence, the TOEIC Reading test corresponds well to authenticity, as the language used in the test is natural, related to real life situations, and meaningful. However, the lack of interactiveness and contextualization of the tests leads to inauthenticity. Finally, practicality deals with sufficient resources used. Overall, the practicality of the TOEIC Reading test is strong due to various reasons. For example, the test itself helps save financial costs in hiring markers, leading to the affordable cost of testing.

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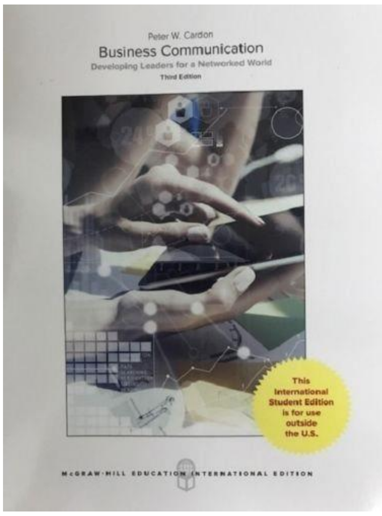

BOOK REVIEW

TITLE: **Business Communication: Developing Leaders for a Networked World**

AUTHOR: Peter W. Cardon

Publisher: McGraw-Hill Education
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Reviewed by: Rusma Kalra

Business Communication: Developing Leaders for a Networked World is an outstanding collection of business communication skills and techniques revolving around the theme of reclassifying the direction of business in the 21st century. The word "business" is also constructed broadly to include not only corporates but also nonprofit organizations, meanwhile the term "professional communication" seems to be used interchangeably with "business communication."

The 16-module book is divided into five sections: Introduction to Business Communication, Principles of Interpersonal Communication, Principles of Business Messages, Types of Business Messages, and Reports and Presentations.

Overall, the purpose of this book is to train and educate readers or learners how to communicate in today's highly competitive business environment. The book examines how communications across different cultures may hinder, harm or advance business deals. The book investigates cultural awareness, not only to guide young adults, but also give direction to managers who need to be better versed in cultural social standards and etiquettes in different parts of the world in order to settle a deal or business negotiations.

Section 1 describes how competence, caring, and character affect the person's credibility as a business communicator. Moreover, business ethics, corporate values and personal values are touched upon. This section serves as a core foundation for the book as a whole.

Section 2 addresses the cross-cultural differences, people's perception of others and people's tendencies toward stereotyping and ethnocentric thinking. This section augments the importance of cultural intelligence and its importance for global business leaders, and also provides approaches to developing it. Moreover, the issue of the impact of extroversion-introversion on business communication and issue of the role of civility in effective interpersonal communication in the workplace are also thoroughly analyzed. Not only does it examine the effects of culture on one's learning, but also on problem-solving and reasoning patterns. Cardon focuses on differences between both hemispheres – East and West – and presents to readers ways to analyze these differences from each other's perspectives. The concept of time, space, change, and ambiguity described here includes many beneficial pointers for those interested in working across cultures.

With all the social media tools now available to collaborate and communicate, section 3 addresses issues on this new emerging era of digital communication. Cardon step by step goes through different types of online platforms such as the use of blogs, wikis, forums, and other social tools for effective communication within organizations. Even though this review cannot provide full justification of all the social media platforms discussed in the book, they are all recommended as interesting and important tools for addressing current issues in communicating for success in today's business world. Moreover, the trade-offs associated with richness, control, and constraints when choosing a communication channel is explained. Cardon illustrates his points on how to handle emotion effectively in online communication by showing real-life case studies and scenarios in business settings.

Section 4 is mainly devoted to business correspondences etiquette. Cardon emphasizes how delivering routine messages impacts the writer's credibility. He explains how the roles of rank, power distance, and cultural norms between people with different personalities need to be taken into consideration when writing business emails and letters. Furthermore, systematic guidelines on business messages for accomplishing different tasks are simplified. As it is inevitable for businesses to give and receive bad news or disappointing messages, such as either rejecting a business plan proposal or turning down a supplier, and the author reminds us to keep in mind the impacts of a negative tone which may linger and damage rapport. Therefore, the overarching goal is to create a path forward that is in the long-term interests of each party involved.

The last section focuses on reports and business proposal presentations as the final product of decision-making. As many reports rely on business research, Cardon clearly illustrates to readers that because of their roles in decision-making, most reports take much more time to create than daily business correspondence. Moreover, the author clearly explains how creating, planning, and conducting business research impacts your credibility and teaches readers how to evaluate research data, charts, and tables for fairness and effectiveness.

The page layout of the book adds to its intelligibility, with obvious prompts plainly separating passages, heading, strategies, and examples. In addition, examples are presented chronologically throughout the book and are therefore easy to comprehend. Likewise, the tactics described in each chapter are presented in a straightforward manner and the exercises at the end of each chapter are useful for reflection, helping readers to assess their own shortcomings in terms of ambiguity and vulnerability.

All in all, I would say this book highlights the essential elements to being successful business communicators, negotiators, as well as leaders in the social media driven era where our public image is based on our written image communicated via emails, reports, texts, and so forth. Cardon carefully blends theory and practice in order to keep each concept brief and relatable to readers. As a result, this book has great applications for leadership and business management alike. Hence, it is highly recommended as one of the most appropriate supplemental texts in business communication courses or workshops.

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