ENGLISH USE AND PROBLEMS OF INDUSTRIAL PHARMACISTS AT TWO LARGE MULTINATIONAL PHARMACEUTICAL MANUFACTURERS IN THAILAND

A MASTER'S PROJECT

BY

LAGKHANA SRISUWAN

Presented in Partial Fulfillment of the Requirements for the

Master of Arts Degree in Business English for International Communication

at Srinakharinwirot University

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AN ABSTRACT

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In the pharmaceutical industry, the insufficient English proficiency of industrial pharmacists in international communication can cause adverse outcomes in the process of overseas product registration and regulatory audits. This study explores the English use and problems of 51 industrial pharmacists within two large multinational pharmaceutical manufacturers by using a self-developed questionnaire based on the framework of needs analysis (Hutchinson & Waters, 1987) and communicative competence (Canale & Swain, 1980).

The findings indicate that reading is the most frequently used skill, followed by writing, listening and speaking. Amongst those four English skills, the specific communicative tasks that Thai industrial pharmacists most commonly performed were: 1) reading emails, 2) writing emails, 3) reading validation protocols/reports, 4) reading pharmacopoeias and textbooks on pharmaceutical science and technology, and 5) reading procedural documents. A major problem lies in oral communication skills. The findings also provide recommendations on how to improve English communication skills. The implications of the findings show that valuable sources of target language events, which can benefit ESP and pharmaceutical educators, are crucial to the development of ESP courses.

การใช้และปัญหาในการใช้ภาษาอังกฤษของเภสัชกรการอุตสาหกรรมในโรงงานผลิตยาข้ามชาติขนาดใหญ่ 2 แห่งในประเทศไทย

บทคัดย่อ

ของ

ลักขณา ศรีสุวรรณ

เสนอต่อบัณฑิตวิทยาลัย มหาวิทยาลัยศรีนครินทรวิโรฒ เพื่อเป็นส่วนหนึ่งของการศึกษา
ตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต สาขาวิชาภาษาอังกฤษธุรกิจเพื่อการสื่อสารนานาชาติ
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ในวงการเภสัชอุตสาหกรรม ความสามารถที่ไม่เพียงพอในการใช้ภาษาอังกฤษเพื่อสื่อสารกับนานาประเทศของเภสัชกรการอุตสาหกรรม ย่อมส่งผลอันไม่พึงประสงค์ ต่อกระบวนการยื่นขึ้นทะเบียนผลิตภัณฑ์ในต่างประเทศ และการตรวจประเมินความสอดคล้องต่อข้อกำหนดของกฎหมายระหว่างประเทศที่บังคับใช้ งานวิจัยนี้สำรวจปัญหาและการใช้ภาษาอังกฤษในเภสัชกรการอุตสาหกรรมจำนวน 51 รายซึ่งทำงานอยู่ในโรงงานผลิตยาข้ามชาติขนาดใหญ่ 2 แห่งในประเทศไทย เครื่องมือวิจัยคือแบบสอบถามซึ่งผู้วิจัยพัฒนาขึ้นตามกรอบความคิดเชิงทฤษฎีการวิเคราะห์ความต้องการ (ฮัทชินสันและวอเตอร์ส, 2530) และ สมิทธิภาพทางภาษาเพื่อการสื่อสาร (คาเนลและสเวน, 2523)

ผลจากการวิจัยบ่งชี้ว่าทักษะการอ่าน เป็นทักษะภาษาอังกฤษที่มีการใช้งานมากที่สุด และทักษะที่มีการใช้งานมากในลำดับถัดมาได้แก่ ทักษะการเขียน ทักษะการฟัง และทักษะการพูดตามลำดับ งานวิจัยพบว่ากิจกรรมการทำงานที่เภสัชกรการอุตสาหกรรมมักจะต้องปฏิบัติโดยใช้ทักษะภาษาอังกฤษมากที่สุดเรียงตามลำดับได้แก่ 1) การอ่านอีเมล์ 2) การเขียนอีเมล์ 3) การอ่านโปรโตคอลและรายงานการตรวจสอบความถูกต้อง (validation) 4) การอ่านตำรายา และหนังสืออ้างอิงด้านเภสัชวิทยา และเทคโนโลยีเภสัชกรรม และ 5) การอ่านเอกสารอธิบายวิธีการปฏิบัติงาน ผลการศึกษาแสดงว่าทักษะภาษาอังกฤษที่ใช้ในการสนทนาเป็นทักษะที่เป็นปัญหามากที่สุด และให้ข้อเสนอแนะในการแก้ไขปัญหาสำหรับการใช้ภาษาอังกฤษในการปฏิบัติงาน ผลจากการวิจัยยังนำเสนอข้อมูลเกี่ยวกับการใช้ภาษาอังกฤษในวงการเภสัชอุตสาหกรรม อันเป็นประโยชน์ต่อคณาจารย์ทางด้านภาษาอังกฤษเพื่อวัตถุประสงค์เฉพาะและด้านการศึกษาทางเภสัชศาสตร์ ในการพัฒนาหลักสูตรให้สามารถตอบสนองต่อความต้องการในการใช้ภาษาที่แท้จริงของเภสัชกรการอุตสาหกรรม

The Master's Project

titled

"English Use and Problems of Industrial Pharmacists at Two Large Multinational Pharmaceutical Manufacturers in Thailand"

By

Lagkhana Srisuwan

has been approved by the Graduate School as partial fulfillment of the requirements for the Master of Arts degree in Business English for International Communication of Srinakharinwirot University.

..... Dean of Graduate School

(Assoc. Prof. Dr. Somchai Santiwatanakul)

May ……, 2014

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Lagkhana Srisuwan

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CHAPTER I

INTRODUCTION

Background

In Thailand, the continuing globalisation of the pharmaceutical industry, with growth in imports and exports, necessitates an increase in the use of English for communication. Because Thailand has a small number of local pharmaceutical manufacturers and they have limited production capabilities, the country is unable to produce adequate pharmaceutical products and, therefore, depends on imported products to meet domestic demand. Imports of pharmaceutical products have increased considerably over the last 10 years, and in 2010 they accounted for approximately 70% of total domestic drug consumption (Thai Bureau of Drug Control, 2012). Some local manufacturers have increased exports of their products to ASEAN countries, Europe, the USA, and other national markets (Department of Trade Negotiations, 2009; IMS Health Thailand, 2011). This growing interdependency within the pharmaceutical industry increases the need for industrial pharmacists to use English for international communication.

English communication skills are of importance to Thai industrial pharmacists for several reasons. First, due to the international nature of the pharmaceutical industry, English skills have become an important qualification for industrial pharmacists during recruitment (Kibat, 1997). Second, Thai industrial pharmacists need to use English increasingly in response to the growing demand for English for international communication in the pharmaceutical industry. Finally, as industrial pharmacists usually take ultimate responsibility within their companies, failure arising from limited English proficiency can, therefore, considerably impact the companies they work for.

The limited English proficiency of industrial pharmacists can cause a significant delay in the pharmaceutical registration process. To register pharmaceutical products for sales abroad, industrial pharmacists have to prepare registration dossiers in English, which requires extensive use of reading and writing skills, such as reading pharmacopoeias to update new specifications and writing the drug manufacturing process, the results of the stability study and other supporting information. An inability to prepare the dossiers with grammatically correct and clear English can lead to rejections or requests for more information from health authorities, causing significant delays within the regulatory registration process (Health Science Authority, 2011; Thai Bureau of Drug Control, 2007).

In addition, the limited English proficiency of industrial pharmacists can cause an adverse audit outcome and a significant delay in the approval process for a manufacturing license. An onsite audit by foreign health authorities or third-party auditors requires extensive use of English skills by Thai industrial pharmacists. For instance, listening and speaking skills are frequently used while welcoming auditors during their arrival, discussing, interacting and negotiating with auditors during audit meetings and plant tours. Furthermore, reading and writing skills are required in response to official audit reports from auditors. Failures in the use of English during audits may result in an adverse audit outcome and thus delay the approval process for a manufacturing license (PharmOut Pty Ltd, 2012; “Language Is Biggest,” 2010).

Based on the findings of my pilot study, Thai industrial pharmacists encountered several problems with English use in the workplace. For instance, they sometimes have an incomplete understanding of English texts or messages during routine work. This incomplete understanding is due to limited knowledge of general and technical vocabulary, idioms or slang, grammatical structure, and word choice. Sometimes, they are

unfamiliar with different accents and have difficulty getting details or main ideas from spoken English. They also have difficulties pronouncing some words properly. In addition, some of them are apprehensive when verbally communicating in English. These underlying problems should be recognised and resolved so that industrial pharmacists can use English effectively and professionally in their routine work.

A number of researchers have investigated problems with English use among pharmaceutical professionals and other healthcare professionals based on a needs analysis framework (Alharby, 2005; Phutirat & Suwannapatama, 2007; Thongtang, 2009). Alharby (2005) reported that hospital pharmacists regularly used the four English skills to perform their routine tasks, but each skill was used at a different frequency. Likewise, Phutirat & Suwannapatama (2007) and Thongtang (2009) provided support for the use and importance of the four English skills in the daily tasks of hospital pharmacists. Thongtang (2009) focused on investigating problems in listening and speaking skills as well as strategies to cope with these problems, while Phutirat & Suwannapatama (2007) had a broader focus on the four English skills. The findings of these studies provided empirical data on the problems and communicative needs of English skills that were beneficial for English for Specific Purposes (ESP) course designers in the development of English courses for healthcare professionals.

However, none of these studies pays direct attention to industrial pharmacists as distinct from hospital pharmacists in terms of routine activities, the documents used, and the groups of people who the pharmacists need to communicate with in English. The aim of this study, therefore, is to identify the use of English in the everyday tasks of Thai industrial pharmacists. This study also focuses on examining the problems related to the use of English in their professional careers and the solutions they adopted to overcome

those problems. The four English communication skills to be investigated are reading, writing, listening, and speaking.

Objectives of the Study

The objectives of this study are as the follows:

1) To investigate the English use for professional purposes of Thai industrial pharmacists in multinational pharmaceutical manufacturers

2) To examine the problems with English use in the current work situations of Thai industrial pharmacists

3) To provide practical suggestions for resolving English usage problems for Thai industrial pharmacists.

Research Questions

This study focuses on answering the following questions:

1) To what extent do industrial pharmacists perform their routine tasks using the four English skills: reading, writing, listening, and speaking?

2) To what extent do Thai industrial pharmacists have problems with English use in their routine work?

3) What are suggestions for resolving problems with English use in routine work?

Significance of the Study

This study is beneficial to the pharmaceutical profession and ESP education. The findings of this study will make pharmacists aware of the significant use of English in the pharmaceutical industry and the problems that they may encounter if they lack proficiency in the use of English while working in a multinational context. In addition, useful suggestions for handling problems with English use are presented so that pharmacists can handle these problems effectively. ESP course designers will also benefit

as the findings may enable them to develop English curricula that well respond to the real needs of Thai industrial pharmacists.

Scope of the Study

This study focused on problems in terms of English use. The participants of this study were 51 industrial pharmacists who worked for two multinational pharmaceutical manufacturers, namely, OLIC (Thailand) Limited and Interthai Pharmaceutical Manufacturing Co., Ltd.

Definition of Terms

Industrial pharmacists.

Industrial pharmacists refer to pharmacists who have taken up a job post in the pharmaceutical industry (e.g., pharmaceutical manufacturers, pharmaceutical companies, clinical research companies).

Multinational pharmaceutical manufacturers.

Multinational pharmaceutical manufacturers refer to the manufacturing plants of pharmaceutical products that are fully or partly owned by groups of foreign investors. Thus, Thais and foreigners work together in the plant. Foreigners in multinational pharmaceutical manufacturers can be non-native or native speakers of English and commonly take senior or top positions in the company, such as chief executive or department manager.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter presents a review of the relevant literature regarding English use in the contexts of the pharmaceutical industry and similar industries. The review is organised as follows: 1) English for Specific Purposes, 2) Theoretical framework of needs analysis, 3) Responsibilities of industrial pharmacists in pharmaceutical manufacturers in Thailand, 4) English skill use in pharmaceutical manufacturing industries in Thailand, 5) English skill use in other manufacturing industries in Thailand, 6) Problems with English use in a work context, 7) Suggestions on the problems with English use in a work context, and 8) Previous studies on the use of English skills in the pharmaceutical profession.

English for Specific Purposes (ESP)

ESP is an approach to English teaching for a particular academic or occupational field; teaching English to pharmacists can, therefore, be categorised as such an approach. In this section, the theoretical framework of ESP and needs analysis is reviewed to provide background information for the present research.

Development of ESP.

English for Specific Purposes (ESP) emerged in the late 1960s and has become increasingly important in English language teaching as a result of three main factors. First, the expansion of global technology and commerce as well as the economic power of the United States after World War II has driven the increasing demand for English as an international language. Second, linguistics has been revolutionised to focus more on learners' specialisations and needs. Lastly, psychological insights in the same period have placed greater emphasis on the importance of learners' attitudes and its influence on learners' motivation to learn and effectual learning (Hutchinson & Waters, 1987).

Definitions of ESP.

A number of ESP researchers have proposed noteworthy ideas about what ESP means (Dudley-Evans & St. John, 1998; Hutchinson & Waters, 1987; Hyland, 2002; Robinson, 1980). Robinson (1980) argued that an ESP course should focus on the success of learners in regard to performing well in their occupational or academic situations. In addition, the course should be tailor-made and based on careful analysis of learners' needs. Robinson's emphasis on the basis of learners' needs seems to be in accord with Hutchinson & Waters (1987), who described ESP as an approach to English language teaching based on each learner's needs. They added that the teaching content and method of ESP can vary depending on learners' particular interests.

A comprehensive definition of ESP in terms of absolute and variable characteristics has been offered by Dudley-Evans & St. John (1998, pp.4-5), as illustrated in Table 1. The absolute characteristics in this definition still place enormous emphasis on learners' needs. However, this covers more subtle focal points in regard to the use of methodology, language, skills, discourse, and genres with the activities ESP serves. Meanwhile, the variable characteristics indicate a variety of applicable ESP teaching methodologies, as well as age ranges and competence levels of learners.

Table 1
Characteristics of ESP (Dudley-Evans & St. John, 1998, pp. 4-5)

Absolute Characteristics	**Variable characteristics**
ESP is designed to meet specific needs of the learner.	ESP may be related to or designed for specific disciplines.
ESP makes use of the underlying methodology and activities of the disciplines it serves.	ESP may use, in specific teaching situations, a different methodology from that of general English.
ESP is centered on the language (grammar, lexis, register), skills, discourse and genres appropriate to these activities	ESP is likely to be designed for adult learners, either at a tertiary level institution or in a professional work situation. It could, however, be used for learners at the secondary school level.
	ESP is generally designed for intermediate or advanced students. Most ESP courses assume basic knowledge of the language system, but it can be used with beginners.

Hyland (2002) described ESP as language education that is research-based. Specificity is the distinctive nature that results in successful ESP in the context of English language teaching. Specificity in the view of Hyland refers to a distinctive approach to language teaching based on two main concerns. First, language features, discourse practices, and communicative skills should be specifically identified for different target groups of learners. Second, teaching practices should be specific to the level of expertise and meet the particular needs of learners.

In summary, ESP is an approach to English teaching that has learners' specific needs as the main focus. The target groups of learners in ESP can vary from academic to professional fields. An ESP course is specifically designed for each target group, so teaching content and methodology can be different depending on the particular interests of learners.

Needs Analysis

Definitions of needs analysis.

Needs analysis refers to the processes involved in the collection of information pertaining to the needs of a particular group of learners in occupational or academic fields. A common purpose of needs analysis conducted in an English teaching context is to identify the learning needs of students. After needs are identified, data obtained through needs analysis will be interpreted and become the basis for further developments, such as teaching materials, learning activities, course evaluations, etc. (Brown, 2011). Due to its useful contribution to ESP, needs analysis is considered a cornerstone for curriculum development, and it should be the first step performed before all other decisions are made in the development of an ESP course (Belcher, 2006; Brown, 2011; Dudley-Evans & St. John, 1998; West, 1997).

Definitions of needs.

Needs have been defined by ESP researchers in a number of ways based on the various philosophies and perspectives of researchers. Hutchinson & Waters (1987) defined needs by clearly dividing them into target needs and learning needs.

Target needs. Target needs refer to "what the learner needs to do in the target situation" (Hutchinson & Waters, 1987, p. 54), which Hutchinson & Waters (1987) describe in terms of the following three key distinctions: necessities, lacks, and wants.

Necessities are considered the type of needs influenced by the demands of the target situation. To be specific, necessities refer to linguistic features (e.g., language items, skills, strategies, subject knowledge, etc.), which are commonly used in the target situations. Thus, language learners need to apprehend in order to function effectively in such identified situations.

Lacks are the gaps between the learner's target proficiency and existing proficiency. This entails the differences between the knowledge that language learners already possess and the knowledge that learners should have in order to function effectively in the target situations. In an ESP approach, the lacks of learners should also be discovered in order to properly judge which necessities learners lack and whether specific instructions should be provided by taking their lacks into consideration.

Wants are subjective perceptions of learners about linguistic features that they want or feel the need to master. These needs may be in conflict with the necessities and lacks perceived by other interested parties (e.g., course designers, sponsors, or teachers). However, wants perceived by the majority of all interested parties exist and can be assimilated into a syllabus or methodology by negotiation between instructors and learners (West, 1997).

Learning needs.

Learning needs refer to "what the learner needs to do in order to learn" (Hutchinson & Waters, 1987, p. 54). Hutchinson & Waters (1987) emphasised the importance of learning needs by pointing out that the ESP process is concerned mainly with learning; therefore, ESP practitioners must also take the learning needs and the constraints of learning situations into careful consideration. The target situation is seen as unlikely to be a reliable indicator for what is needed and useful in the ESP learning situation because it can reveal only the destination of language learning. To achieve the course objectives, ESP practitioners must also devote particular attention to the conditions of the learning situation, knowledge, skills, preferred learning strategies, and the motivations of the learners.

In conclusion, ESP is an approach to language teaching based on learners' needs. These needs can be identified by using the method of needs analysis, which is an

important tool for gathering information pertaining to a particular group of learners. These identified needs can be used as a basis for ESP curriculum development.

English Courses for Thai Pharmacy Students

English courses for Thai pharmacy students have been changed considerably in recent years. The courses vary depending on policies of responsible universities. However, at present, many universities tend to shift their focuses to provide pharmacy students with English for Specific Purposes. The English courses that universities provide can be grouped into two main categories: 1) Basic English Courses that aim at providing the basic study skills and communication skills needed for further university study and communication purposes and 2) ESP courses that aim at equipping pharmacy students with the English language skills needed for their future pharmaceutical careers ("CU Doctor of Pharmacy Program", 2013; "NU Doctor of Pharmacy Program in Pharmaceutical Care", 2008; "PSU Bachelor of Pharmaceutical Science Program", 2006).

Based on available course syllabi on the webpages of some universities (see Appendix B), many ESP courses for Thai pharmacy students tend to provide students with integrated English skills, including reading, writing, listening, and speaking for two main objectives. The first objective involves the development of the English skills necessary for the advancement of knowledge in pharmaceutical education, such as reading and writing health science research articles, drug information, drug labels, and medical instructions. The second objective involves the development of the English skills for students' future careers such, as writing business correspondence, proposals, and reports, speech and oral presentations, job interviews, and communication skills used in the provision of drug counselling and patient advice ("KKU Pharmacy Course Outlines", 2013; "TU English for Health Science Course Outline", 2012).

To the extent that the researcher knows, these English course syllabi do not place emphasis on the provision of particular English communication skills typically used by industrial pharmacists, such as writing validation protocols and reports and procedural documents.

Responsibilities of Industrial Pharmacists in Thailand

Pharmaceutical manufacturing in Thailand consists of only non-research based activities. Local pharmaceutical manufacturers have limited capability with respect to the research and development (R&D) of new drug substances because this requires a huge investment and a great number of scientific experts. Most R&D projects related to the discovery of new molecular entities are undertaken in developed countries, such as European countries, Japan, and the United States. The main activities of local pharmaceutical manufacturers involve the packaging and formulating of finished products from imported active and non-active ingredients. Some aspects of R&D that may take place are activities to ensure that a formulated product can be manufactured on a large scale using the available production machinery in local plants (Danish Trade Council, 2006; Department of Trade Negotiations, 2009; Kuanpoth, 2006).

Due to the limitations, the responsibilities of industrial pharmacists working for pharmaceutical manufacturers in Thailand encompass only some of those of industrial pharmacists worldwide, which are shown in Figure 1. Their roles and responsibilities relate to some aspects of R&D and other activities required by business concerns and regulatory requirements. These include manufacturing, quality assurance, quality control, regulatory affairs and product registration, sales and marketing, and management (Thai Bureau of Drug Control, 2011).

Figure 1. Overview of roles and responsibilities for industrial pharmacists worldwide. * = roles and responsibilities of industrial pharmacists that may be found in pharmaceutical manufacturers in Thailand, adapted from "The role of the pharmacist in health care system" by World Health Organization, 1994; "Careers within the Pharmaceutical Industry" by Stonier, P. D., 2003, Chichester: John Wiley & Sons Ltd.

The Use of English Language Skills in the Pharmaceutical Manufacturing Industry in Thailand

Thai industrial pharmacists use the four English skills (reading, writing, listening, and speaking) to perform their routine work. Based on the researcher's experience as an industrial pharmacist and interviews with some Thai industrial pharmacists, these four skills may be used at different frequencies depending on the responsibilities and level of job positions. Table 2 shows a summary of English communicative tasks that industrial pharmacists engage in and key general and technical documents they have to read and produce. In Table 2, many technical terms and abbreviations used in the pharmaceutical manufacturing context are introduced. For better understanding, a glossary of pharmaceutical terminology and a list of abbreviations are provided in Appendix A and Appendix B, respectively.

Table 2
Documents and Communicative Tasks Requiring English Skill Use

English Skills	**Documents**
Reading	▪ Emails, letters, memos, and faxes ▪ Minutes of meetings ▪ Procedural documents (e.g. WI and SOP) ▪ Manuals of computer software, production machines, or laboratory instruments (e.g. Software for HPLC, GC, FT-IR, etc.) ▪ International standards and guidelines (e.g. GMP, PIC/s, ISO 9001, ACTD, ACTR, etc.) ▪ Pharmacopoeias and textbooks regarding pharmaceutical science and technology (e.g. Codex, Hand book of Pharmaceutical Excipients, USP, BP, Ph. Eur, TP, JP, etc.) ▪ Protocols or plans and reports concerning quality assurance and validations for pharmaceutical manufacturers (e.g. validation master plans, cleaning validation protocol and reports, equipment qualification protocols and reports (IQ/OQ/PQ/DQ), product validation, etc.)
Writing	▪ Emails, letters, memos, and faxes ▪ Minutes of meetings ▪ Procedural documents (e.g. WI and SOP) ▪ Manuals of production machines, or laboratory instruments ▪ Training materials ▪ Dossiers regarding the registration of pharmaceutical products ▪ Analytical methods for quality control of raw materials and products ▪ Raw material, packaging material and finished product specifications ▪ Protocols or plans and reports concerning quality assurance and validations for pharmaceutical manufacturers (e.g. validation master plans, cleaning validation protocol and reports, equipment qualification protocols and reports (IQ/OQ/PQ/DQ), product validation, etc.)
English Skills	**Communication tasks**
Listening	▪ Listening to bosses, non-Thai speaking colleagues, customers, suppliers, or auditors while discussing work-related matters face-to-face or on the telephone ▪ Attending internal meetings with non-Thai speaking colleagues ▪ Attending seminars, conferences or training courses regarding pharmaceutical knowledge and technology ▪ Attending audit wrap-ups
Speaking	▪ Discussing work-related matters with non-Thai speaking bosses, colleagues, customers, visitors, suppliers, or auditors face-to-face, on the phone or during meetings ▪ Negotiating with non-Thai speaking colleagues, customers, visitors, suppliers, or auditors in various situations ▪ Presenting on work progress or reports in weekly, monthly, or yearly meetings

These specific work-related documents and work activities illustrate some differences and similarities in language discourse between industrial pharmacists and other similar professions. Generally, hospital pharmacists use English skills to communicate with groups of foreign patients and medical professionals, while industrial pharmacists use English skills to address various groups of foreign people in the

workplace, such as colleagues, managers, and customers (Phutirat & Suwannapatama, 2007; Thongtang, 2009).

Likewise, industrial engineers working in the manufacturing industry communicate with similar groups of people, such as foreign managers, colleagues, customers, suppliers, and contractors. Several previous studies have also shown some overlap in the types of work-related documents that industrial pharmacists and industrial engineers engage with, including emails, letters, faxes, equipment manuals, work instructions, minutes of meetings, and particular reports (Chalardsit, 2007; Hart-Rawung, 2008; Kassim & Ali, 2010).

The Use of English Language Skills in Other Manufacturing Industries in Thailand

Professionals in multinational workplaces who share similar work activities most likely need to use similar types of English skills for communication. In a manufacturing industry, input elements, such as materials, machines, and energy, are transformed to output products for customers (Rajput, 2007). In a multinational manufacturer, a production supervisor may need to use reading and writing skills in routine communicative activities, such as writing emails in English to customers to confirm product specifications and reading machine instructions. An adroit production manager may use listening and speaking skills to negotiate with foreign suppliers to lower machinery and material costs. Similarly, industrial pharmacists may have to use their English skills during the manufacturing process of pharmaceutical products. Thus, a review of English skill use in other manufacturing industries is provided in this section.

Many studies revealed that all four skills (reading, writing, listening, and speaking) are necessary for Thai professionals in the manufacturing industry (Chalardsit, 2007; Hart-Rawung, 2008). However, the four English skills have been used in workplaces at a different level depending on professional careers and individual work

situations, such as position levels, job responsibilities, and departments. Chalardsit (2007) investigated the problems with English use among engineers in automotive manufacturers located in the east of Thailand. The results showed that all four English skills were used but at a different frequency. Reading was the most frequently used skill, followed by writing, listening, and speaking. Oral communication skills were their biggest problem. Similarly, Hart-Rawung (2008) reported that the Thai automotive engineers in her study needed English competence in the four skills, and they encountered the greatest difficulty with oral communication skills.

The necessity of the four English skills for Thai professionals in manufacturing as revealed in previous studies may be seen as indicative of the types of English skills needed by industrial pharmacists. The reason lies in the connection between the types of industries. Many work activities that take place in a pharmaceutical manufacturer also take place in manufacturing plants that produce other types of merchandise. Industrial pharmacists and other professionals who work in the manufacturing industry may have to perform similar activities using similar English skills (e.g., reading the manuals of imported machines, discussing routine tasks with foreign colleagues or managers, reading reference textbooks related to their work, and writing specific reports relating to manufacturing activities). Therefore, a study of English skills used by industrial pharmacists in pharmaceutical manufacturers should focus on all four English skills.

Problems with English Use in a Work Context

All four English skills (reading, writing, listening and speaking) were believed to be important for industrial pharmacists to function effectively in their daily work. Therefore, the problems with English use in different international workplaces from previous studies (Chaichanasiri, 2007; Chalardsith, 2007; Hart-Rawung, 2008;

Khamkaew, 2009; Mudlae, 2011; Ongwisut, 2008; Phutirat & Suwannapatama, 2007; Tipmontree, 2007; Rogerson-Revell, 2007) were reviewed.

Reading skills.

Common problems with reading skills are a lack of knowledge about general vocabulary, technical terms, idioms and grammatical structure, difficulty in understanding the details or main ideas of a text and difficulty guessing the meanings of unknown words.

Writing skills.

The problems that often occur with writing skills are a lack of knowledge about vocabulary, grammatical and sentence structure, selecting appropriate words and expressing ideas clearly. A particular problem concerning writing skills is difficulty in organising paragraphs and using correct spelling.

Listening Skills.

Common problems of listening skills are a variety of foreign accents, a lack of knowledge of general vocabulary and technical terms, idioms, understanding long conversations and rapid speech.

Speaking skills.

A lack of vocabulary and grammatical knowledge is still an important problem with regard to speaking. Other speaking skill problems are pronouncing words with appropriate stress and intonation, selecting appropriate words, correcting sentence patterns, expressing ideas appropriately, providing immediate reaction in a conversation, interrupting or entering discussions in a polite manner and inhibition.

The problems with English language use in international workplaces are diverse, but they can be grouped into categories according to theoretical frameworks established in the ESL/EFL field for explaining problems with English language learning. Strevens

(1980) divided language problems into linguistic and sociolinguistic types. These problems may result from a lack of English competence. According to Canale and Swain (1980), learners should be prepared to achieve a sufficient level of three communicative competence components: 1) grammatical competence, which involves knowledge of lexicons and rules of morphology, syntax, semantics, and phonology, 2) sociolinguistic competence, which involves the ability to know sociocultural rules in ways whereby learners can produce and comprehend language appropriately and politely in certain social situations, and 3) strategic competence, which refers to the ability to use verbal and non-verbal communication strategies in order to compensate for breakdowns in communication due to insufficient competence.

The most common problems for every English skill are lacks in lexical, sentence and grammatical knowledge. However, some particular problems are specific for certain English skills and rarely found in others. For instance, paragraph organisation is a particular problem with respect to writing. By contrast, responding with appropriate words quickly enough during conversations and speaking anxiety are particular problems in speaking skill use. Based on communicative competence, insufficient grammatical competence is not the only problems with English use, but a lack of sociolinguistic and strategic competence is also an important source of English usage problems.

In addition, the levels of problems with English use vary depending on professional careers. Problems that may be very important for a group of workers in one workplace setting may not be of importance for others. Therefore, an investigation into the problems with English use among industrial pharmacists should be conducted in order to help determine their best solutions.

Previous Studies

Several studies have investigated English use and associated problems within the healthcare professions. They are reviewed in the following paragraphs.

Alharby (2005) conducted a study to investigate the English communicative needs of healthcare professions working for three different hospitals located in the Riyadh area of Saudi Arabia by using a questionnaire survey. In this study, the researcher investigated three aspects based on the framework of needs analysis: the extent to which English is used by healthcare professionals in their careers, the level of the four English skills required in their work-related activities, and their views on the English language education during their previous college study.

The findings revealed that English is extensively used in healthcare professions but to a different extent among the different healthcare professions. Physicians used English in their work more frequently than dentists, pharmacists, and applied medical specialists, and English proficiency was perceived as very important for performing their jobs effectively. However, receptive English skills (reading and listening) have a little more importance than productive English skills (speaking and writing). The results also reflected that the previous undergraduate level English language courses seemed insufficient to satisfy their current professional needs for English.

Thongtang (2009) conducted a study to investigate problems with the use of English among medical personnel responsible for serving foreign emergency patients at Uttaradit Hospital. This study explored medical personnel's use of the four English skills in the current situations in their field of work. The researcher also studied the problems regarding English use in providing medical care for foreign emergency patients by focusing mainly on the speaking and listening skills. The strategies that the medical personnel frequently used in dealing with such problems were also explored.

The findings revealed that most medical personnel perceived English as an important medium for conducting their work. The medical personnel in the emergency department used English reading skills with the highest frequency compared to other skills. Getting the main ideas of verbal messages was the most problematic task in listening, while the use of appropriate vocabulary and idioms was perceived as the biggest problem in speaking. Guessing the meaning from patients' non-verbal language was the strategy that medical personnel most frequently used to solve their problems.

Phutirat & Suwannapatama (2007) investigated the problems and needs in regard to the English skills of Thai pharmacists who worked for two large private hospitals in Bangkok by using a survey questionnaire. The researchers designed the survey questionnaire themselves based on the previous literature in an ESP context and the needs analysis framework. This study focused on investigating the problems faced by the hospital pharmacists when using the four English skills, listening, speaking, reading, and writing, in their work. The study also examined the extent to which the four English skills are needed to facilitate English communication in their real work situations.

The results indicated that listening was the most problematic skill, followed by speaking, writing, and reading skill. The activities identified as posing the most serious problems were writing pharmaceutical documents, completing a job application, and listening to foreign patients' general questions. The activities performed by using the English reading skill were seen as the least problematic activities when compared to activities that involved using other English skills. However, the pharmacists still expressed that the greatest need was for English reading skill even though they only had small problems with it.

Based on the review of previous literature, few studies have been conducted to investigate the problems with English use in the pharmaceutical profession. To the best of

the researcher's knowledge, no research has been conducted on English use in the specialised field of industrial pharmacists. This research, therefore, focuses on the area of industrial pharmacy.

CHAPTER III

METHODOLOGY

This chapter outlines the research methodology employed in the present study. The first section explains how the research participants were selected. The second section describes the details of the research instrument, the construction of the questionnaire, its validity, and its contents. The third section explains the procedures for data collection, and the last section illustrates how the gathered data were analysed.

Selection of Participants

The participants of this study were 51 industrial pharmacists who had at least one year's work experience in pharmaceutical manufacturing at two pharmaceutical manufacturers: OLIC (Thailand) Limited (36 industrial pharmacists) and Interthai Pharmaceutical Manufacturing Limited (15 industrial pharmacists).

They were selected using the method of purposive sampling based on two reasons. First, the two companies are the top multinational pharmaceutical manufacturers in Thailand (International Health Policy Program, 2011). Second, these companies are contractual manufacturers of pharmaceutical products and have a number of international clients from the USA, Europe and Asia. This provides their employees with plenty of opportunities to communicate in English with their clients.

Research Instrument

This section discusses the development of the research instrument used in this study. The key topics for discussion were: 1) survey questionnaire, 2) construction of the questionnaire, 3) validity of the questionnaire, and 4) content of the questionnaire.

Survey questionnaire.

A self-administered questionnaire was developed using a needs analysis framework (Hutchinson & Waters, 1987) by focusing on an analysis of the target situation. The design of the questionnaire was based on the background information obtained from previous research and preliminary interviews with some industrial pharmacists during the development process of the questionnaire.

Construction of the questionnaire.

The construction of the questionnaire consisted of six steps. First, the researcher reviewed the related literature. The second step was to conduct preliminary interviews with five industrial pharmacists in order to recognise data of English use and associated problems in their professional careers. Third, an initial draft of the questionnaire in Thai was prepared and presented to the same five industrial pharmacists to check clarity and comprehensibility. Fourth, the initial draft was then presented to the advisor and master project committee members for advice and revisions. Fifth, a revised draft was piloted with 15 industrial pharmacists in pharmaceutical manufacturers that were not included in this study to measure reliability by calculating Cronbach's alpha. Some question items may be deleted to obtain an acceptable Cronbach's alpha of ≥ 0.70 (Nunnally, 1978). The reliability coefficients obtained from the pilot test were 0.843 for the part on English use and 0.848 for the part on English usage problems. Finally, the final version of the questionnaire was employed in the data collection.

Contents of questionnaire.

A Thai version of the questionnaire was used for data collection to reduce ambiguity and avoid misinterpretation. The questionnaire was divided into five parts. Part I aimed to obtain demographic data, which included: gender, age, years of work experience, educational background and positions held. Part II listed predefined routine

tasks in order to allow the participants to rate how frequently they use English skills to perform routine tasks and were grouped under the four main skills: reading, writing, speaking and listening. This part used a 5-point Likert frequency scale ranging from 1 = least frequent to 5 = most frequent. Part III focused upon determining how frequently the industrial pharmacists encountered problems with English use. The same rating scale as Part II was used. Part IV asked industrial pharmacists to write down suggestions for resolving problems with English use.

Data Collection

The survey was conducted by directly distributing copies of the questionnaires to 51 pharmacists working at the selected multinational pharmaceutical manufacturers during May 2014. The questionnaires were left with the participants for a month in order to provide sufficient time for them to read and respond with care. After the target period of a month, the participants were asked to return the questionnaires. The data collected would then be analysed.

Data Analysis

The quantitative data from the questionnaires were analysed using Microsoft Excel. The statistics to be used were percentages, means ($\bar{x}$), and standard deviation. Percentage was used to analyse the demographic data of the participants. Means ($\bar{x}$) were computed to determine average levels of English skill use and associated problems, referring to the interpretation of 5-point mean ratings from Srisaard (2002), as shown in Table 3. Standard deviation (SD) was also used to determine the spread of the distribution of means.

Table 3
Mean Range and descriptive interpretation for levels of English use and problems

Mean Range	**Descriptive Interpretation**
4.51-5.00	Very high
3.51-4.50	High
2.51-3.50	Moderate
1.51-2.50	Low
1.00-1.50	Very low

CHAPTER IV

FINDINGS

This chapter presents a summary of data collected from industrial pharmacists through the questionnaire survey. The results were divided into four parts: 1) demographic data, 2) the use of English skills, 3) problems with English usage, and 4) suggestions for resolving English usage problems.

Demographic Information of the Industrial Pharmacists

The demographic information derived from 51 industrial pharmacists. The number of returned questionnaires was 51, representing a response rate of 100%. The demographic data were gathered from Part I of the questionnaire to elicit information about gender, age, years of work experience, educational background, and positions, as presented in Table 4.

Table 4
Demographic Characteristics of Participants

Types of Demographic Data	No. Responses	%
Gender		
▪ Male	16	31.4
▪ Female	35	68.6
Age		
▪ 21-30 years	25	49.0
▪ 31-40 years	24	47.1
▪ 41-50 years	1	2.0
▪ 51-60 years	1	2.0
Educational Background		
Highest Degree		
▪ Bachelor's Degree	35	68.6
▪ Master's Degree	15	29.4
▪ Doctoral Degree	1	2.0
Types of English Courses Taken During University Study		
▪ General English	27	52.9
▪ English for Specific Purposes	2	3.9
▪ Both types	22	43.1
Work Experience		
Years of Work Experience in Pharmaceutical Manufacturing		
▪ 1-5 years	24	47.1
▪ 6-10 years	17	33.3
▪ 11-15 years	7	13.7
▪ 16-20 years	1	2.0
▪ 21-25 years	0	0.0
▪ 26-30 years	1	2.0
▪ 31-35 years	1	2.0
Job Level		
▪ Non-managerial level	40	78.4
▪ Managerial level	11	21.6
Job Responsibilities		
Quality Assurance	22	43.1
Production	15	29.4
Quality Control	8	15.7
Research and Development	6	11.8
Regulatory affairs	4	7.8
Other	2	3.9

Table 4 shows the demographic characteristics of the participants. The number of female pharmacists was twice that of male pharmacists, showing a female predominance. With respect to age, approximately half of the participants (49%) were between 21 and 30, 47% were between 31 and 40, and a few of them (4%) were over 40.

The educational background revealed that the majority of the participants (69%) held a Bachelor's degree as their highest degree. Nearly two-thirds of the pharmacists held a Master's degree, but a very small percentage (2%) held a Doctoral degree. More than half of them (53%) identified English courses at their university as General English, while a smaller percentage (43%) took courses in General English and English for Specific Purposes.

With regard to their work experience, almost half of the participants (47%) had 1 to 5 years of work experience in pharmaceutical manufacturing. One-third of them (33%) had 6 to 10 years of experience, whereas some had longer work experience of between 11 and 15 years. Only a few (4%) had over 15 years of work experience. The majority of industrial pharmacists (78%) held a non-managerial position, nearly four times greater than those who held a managerial position (22%). They had different job responsibilities, with the top three categories being Quality Assurance (43%), Production (29%) and Quality Control (16%).

English Skill Use of Thai Industrial Pharmacists

This section presents the findings about the English skill use of Thai industrial pharmacists. They were asked to rate the frequency of their routine communicative tasks in the four English skills. The mean rating for levels of English use was interpreted as follows: 1.00-1.50 = Very low, 1.51-2.50 = Low, 2.51-3.50 = Moderate, 3.51-4.50 = High and 4.51-5.00 = Very high.

The overall results of English skill use are presented in Figure 2. The detailed results for each skill are presented in Tables 5-8 from the greatest to the lowest level of English skill use. As shown in Figure 2, the skill that received the highest mean score was 'reading' (3.51), followed by 'writing skills' (2.79), 'listening skills' (2.69), and

'speaking skills' (2.05). This indicated that the industrial pharmacists used reading skills at work more frequently than writing, listening and speaking skills, respectively.

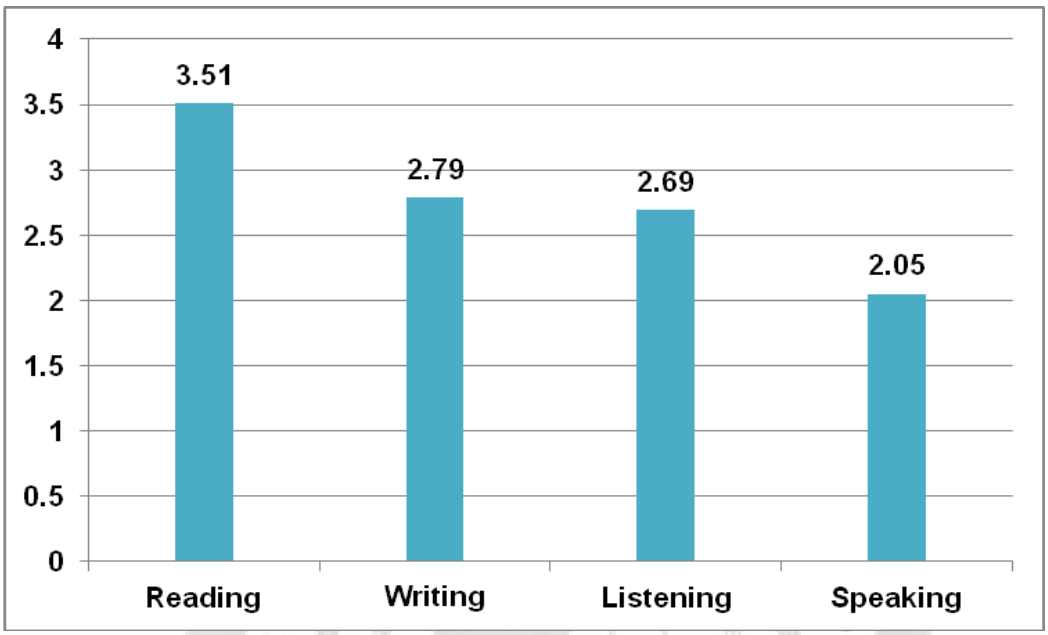

Figure 1. The Overall Levels of English Skill Usage

Table 5 shows the level of reading skills that the industrial pharmacists used. As shown, the average mean of reading skill use was at a high level (3.51). Five out of nine routine tasks obtained mean scores over 3.51, indicating that Thai industrial pharmacists performed reading tasks more than other skills. The top three routine reading tasks were reading letters or emails (4.02), reading protocols or plans and reports concerning quality assurance and validations (3.92), and reading pharmacopoeias and textbooks regarding pharmaceutical science and technology (3.63).

Table 5
Levels of Reading Skill Use

Routine reading tasks	Mean	S.D	Level
1. Reading letters or emails during contacting colleagues, customers, suppliers or auditors for work-related matters	4.20	1.02	High
2. Reading protocols or plans and reports concerning quality assurance and validations	3.92	1.06	High
3. Reading pharmacopoeias and text books regarding pharmaceutical science and technology	3.63	1.22	High
4. Reading standard operating procedures (SOP) or work instructions (WI)	3.63	1.04	High
5. Reading guidelines and references on laws and regulations of pharmaceutical manufacturing and product registration	3.61	0.90	High
6. Reading manuals for manufacturing machines or laboratory equipment	3.35	1.13	Moderate
7. Reading training materials	3.24	0.97	Moderate
8. Reading minutes of meetings	3.12	0.97	Moderate
9. Reading manuals of software regarding production planning or QC laboratory equipment	2.86	1.13	Moderate
Average	**3.51**	**1.05**	**High**

Table 6 presents the level of writing skills used in the routine tasks of industrial pharmacists. On average, writing skills were used at a moderate level, with a mean score of 2.79. Composing letters or emails for work-related matters was the only writing task that obtained a mean score of 4.02, indicating that Thai industrial pharmacists performed that writing task at a high level. The top three routine tasks were composing letters or emails (4.02), writing standard operating procedures or work instructions (3.16), and establishing quality assurance/validation protocols and reports (3.04).

Table 6
Levels of Writing Skill Use

Routine writing tasks	Mean	S.D	Level
1. Composing letters or emails during contacting colleagues, customers, suppliers or auditors for work-related matters	4.02	1.12	High
2. Writing standard operating procedures (SOP) or work instructions (WI)	3.16	1.12	Moderate
3. Establishing quality assurance/validation protocols and reports	3.04	1.30	Moderate
4. Preparing presentations for project proposal or progress reports	2.82	1.16	Moderate
5. Writing minutes of meetings	2.69	1.12	Moderate
6. Writing manuals for manufacturing machines or laboratory equipment	2.43	1.08	Moderate
7. Preparing training materials	2.41	0.92	Moderate
8. Writing analytical methods, and product specifications	2.41	1.36	Moderate
9. Preparing product registration dossiers	2.16	1.16	Moderate
Average	**2.79**	**1.15**	**Moderate**

Table 7 presents the levels of listening skills used in the routine tasks of industrial pharmacists. On average, the industrial pharmacists used listening skills in their routine work at a moderate level. Five out of six listening tasks obtained mean scores that indicated a moderate level of English use. The top three routine tasks were listening to colleagues, customers, and suppliers or auditors while discussing work-related matters face-to-face (3.00), listening in audit wrap-up meetings (2.73), and listening in internal meetings (2.69).

Table 7
Levels of Listening Skill Use

Routine listening tasks	Mean	S.D	Level
1. Listening to colleagues, customers, suppliers, or auditors while face-to-face discussing work-related matters	3.00	1.02	Moderate
2. Listening in audit wrap-up meetings	2.73	1.10	Moderate
3. Listening in internal meetings	2.69	1.01	Moderate
4. Listening in seminars, conferences or training courses regarding pharmaceutical knowledge and technology	2.65	0.84	Moderate
5. Listening to managers while discussing work-related matters	2.63	1.02	Moderate
6. Listening to colleagues, customers, suppliers, or auditors while discussing work-related matters by phone or teleconference	2.41	1.13	Low
Average	**2.69**	**1.02**	**Moderate**

Table 8 shows the levels at which Thai industrial pharmacists used speaking skills to perform their routine tasks. The overall findings showed that performing routine speaking tasks was at a low level, with an average mean score of 2.05. The top three routine tasks were contact with non-Thai speaking colleagues, customers, visitors, suppliers or auditors in face-to-face discussions (2.59), negotiations (2.22), discussions by phone/teleconference, and discussing work-related matters with managers (2.16).

Table 8
Levels of Speaking Skill Use

Routine speaking tasks	Mean	S.D.	Level
1. Face-to-face discussions with non-Thai speaking colleagues, customers, visitors, suppliers, or auditors	2.59	1.13	Moderate
2. Negotiating with non-Thai speaking colleagues, customers, visitors, suppliers, or auditors	2.22	1.12	Low
3. Discussing work-related matters with non-Thai speaking managers	2.16	1.05	Low
4. Discussing with non-Thai speaking colleagues, customers, visitors, suppliers, or auditors by phone or teleconference	2.16	1.05	Low
5. Discussing work-related matters in internal meetings	1.82	0.99	Low
6. Presenting work progresses or reports in a weekly, monthly, or yearly meetings	1.71	0.97	Low
7. Instructing, explaining, or demonstrating in seminars or training courses	1.67	0.95	Low
Average	**2.05**	**1.04**	**Low**

In addition, the researcher observed a great difference in the levels of oral communication skill usage between managerial and non-managerial pharmacists. As shown in Figure 3, managerial pharmacists had much higher mean scores in oral communication skills. This indicated that managerial pharmacists used oral communication skills much more frequently than non-managerial pharmacists. This reflected that different job position levels might require different levels of English skills needed. Thus, more studies should be conducted to investigate the differences with respect to English skills used, particularly between managerial and non-managerial pharmacists, in order to gain a better understanding of English skill use.

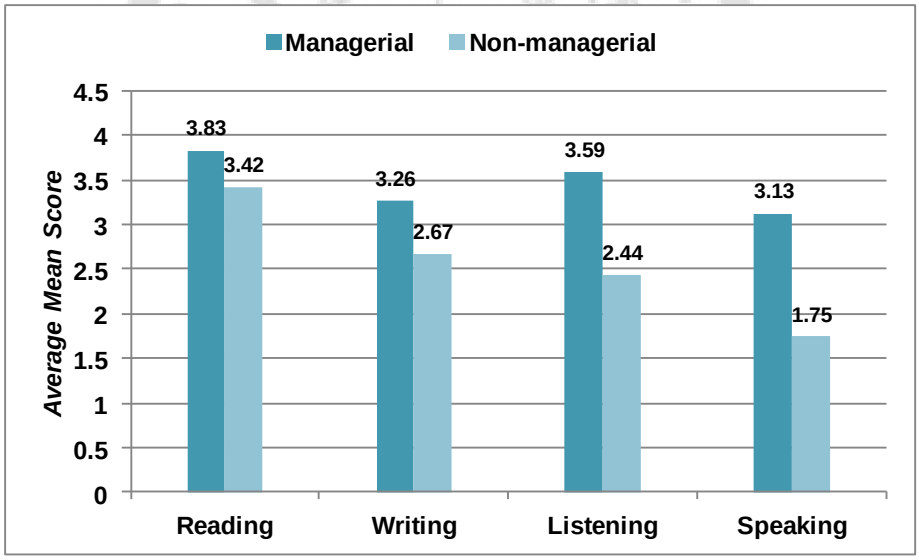

Figure 2. English Skills Used by Managerial and Non-managerial Pharmacists

Levels of English Usage Problems for Thai Industrial Pharmacists

This section presents the problems with English usage of Thai industrial pharmacists. The problems with English usage were divided into four skills: reading, writing, listening and speaking. The problem levels were interpreted through a mean rating from 1 to 5 (1.00-1.50 = Very low, 1.51-2.50 = Low, 2.51-3.50 = Moderate, 3.51-4.50 = High, and 4.51-5.00 = Very high).

Figure 4 shows that listening problems received the highest average mean score (3.05), followed by speaking (3.04), writing (2.68) and reading problems (2.56). This indicated that, overall, industrial pharmacists encountered listening and speaking problems within the workplace at a greater level than writing and reading problems.

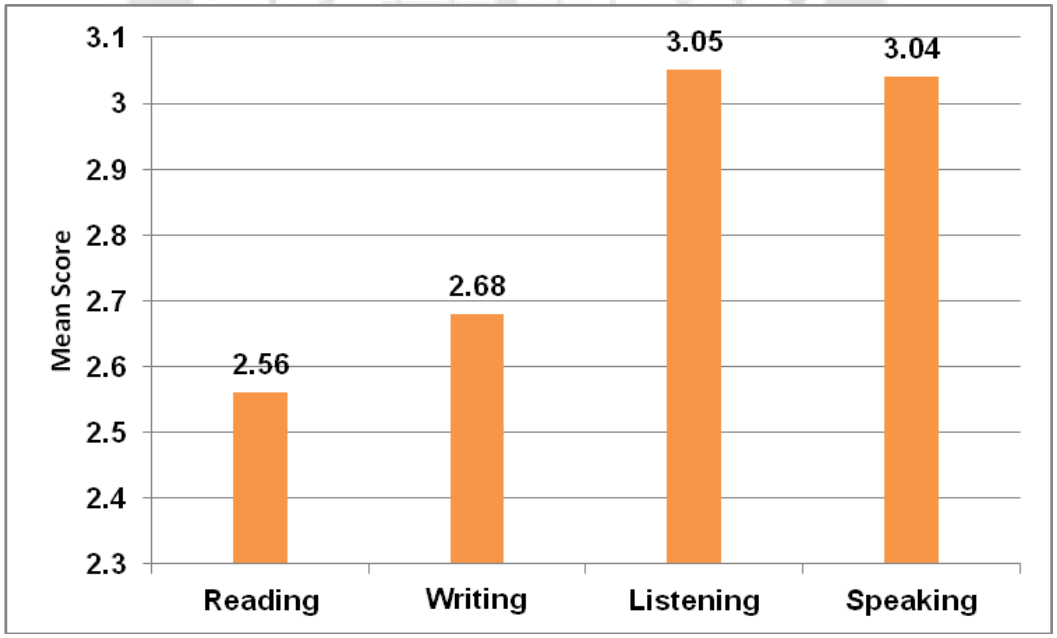

Figure 3. The Overall Levels of English Problems of the Industrial Pharmacists

Table 9 shows the levels of listening problems that industrial pharmacists encountered in their routine work. Overall, industrial pharmacists experienced listening problems at a moderate level, with a mean score of 3.05. It is also worth noting that understanding rapid speech and unfamiliar accents were the only two problems denoting a high level. The top three listening problems were understanding rapid speech (3.55), unfamiliar accents (3.51) and long speech (3.16).

Table 9
Levels of Listening Problems

Listening Problems	Mean	S.D.	Level
1. Understanding rapid speech	3.55	1.03	High
2. Understanding unfamiliar accents e.g., Japanese, German, Indian, or Singaporean English speakers.	3.51	0.99	High
3. Understanding lengthy speech.	3.16	0.95	Moderate
4. Getting anxious when listening during having conversation with foreigners	3.04	1.06	Moderate
5. Understanding details of spoken messages	2.94	0.86	Moderate
6. Getting the main ideas of spoken messages	2.78	0.88	Moderate
7. Lacking knowledge of general vocabulary	2.75	0.89	Moderate
8. Lacking knowledge of technical terminology	2.67	0.84	Moderate
Average	**3.05**	**0.94**	**Moderate**

Table 10 shows the levels of speaking problems of the industrial pharmacists. Overall, industrial pharmacists faced speaking problems at a moderate level. The top three speaking problems were making word choices and pronouncing words properly (3.20), getting anxious when having conversations with foreigners and entering discussions politely and properly (3.16), and producing complete and grammatically correct sentences (3.04).

Table 10
Levels of Speaking Problems

Speaking Problems	Mean	S.D.	Level
1. Making word choices	3.20	0.96	Moderate
2. Having trouble to pronounce some words properly	3.20	1.10	Moderate
3. Getting anxious when having conversation with foreigners	3.16	1.14	Moderate
4. Having trouble to enter discussion politely and properly	3.16	1.05	Moderate
5. Having trouble to produce complete and grammatically correct sentences	3.04	0.96	Moderate
6. Having trouble to respond in proper time during conversation	2.90	1.04	Moderate
7. Lacking knowledge of technical terminology	2.88	0.84	Moderate
8. Lacking knowledge of general vocabulary	2.78	0.92	Moderate
Average	**3.04**	**1.00**	**Moderate**

Table 11 presents the levels of writing problems that industrial pharmacists encountered in their routine work. Overall, industrial pharmacists encountered writing problems at a moderate level. Making word choices was the greatest writing problem. The top three writing problems were making word choices (3.06), having time constraints (2.84) and lacking knowledge of general vocabulary (2.75). It is worth noting that four out of the five top writing problems were semantics-related.

Table 11
Level of Writing Problems

Writing Problems	Mean	S.D.	Level
1. Making choices of words	3.06	0.81	Moderate
2. Having time constraints	2.84	0.95	Moderate
3. Lacking knowledge of general vocabulary	2.75	0.87	Moderate
4. Lacking knowledge of technical terminology	2.73	1.00	Moderate
5. Lacking knowledge of idioms and slang	2.71	1.04	Moderate
6. Linking and a organizing paragraph	2.53	0.83	Moderate
7. Difficulty to appropriately structure ideas in writing	2.45	0.92	Low
8. Lacking knowledge of subject matters	2.33	0.84	Low
Average	**2.68**	**0.91**	**Moderate**

Table 12 shows the level of reading problems that the industrial pharmacists encountered in routine operations. Overall, the industrial pharmacists faced reading problems at a moderate level, with an average mean score of 2.56, showing the lowest level of problems. Lacking knowledge of idioms and slang was the biggest reading problem. The top three reading problems were lacking knowledge of idioms and slang (3.35), general vocabulary (2.71) and lacking knowledge of technical terminology (2.69).

Table 12
Levels of Reading Problems

Reading Problems	Mean	S.D.	Level
1. Lacking knowledge of idioms and slang	3.35	1.04	Moderate
2. Lacking knowledge of general vocabulary	2.71	0.86	Moderate
3. Lacking knowledge of technical terminology	2.69	0.91	Moderate
4. Lacking knowledge of sentences and grammatical structures	2.61	0.96	Moderate
5. Having time constraints	2.51	0.90	Moderate
6. Being unable to get the main ideas	2.24	0.91	Low
7. Being unable to understand details	2.18	0.77	Low
8. Lacking knowledge of subject matters	2.18	0.79	Low
Average	**2.56**	**0.89**	**Moderate**

Suggestions for Handling the Problems of English Use

This section presents a summary of the suggestions that the industrial pharmacists offered. The pharmacists were asked to provide suggestions for handling the problems with English usage. Ten pharmacists did not answer this question. The answers were grouped by subject and the top four categories for each skill are presented in Table 13.

Table 13
Summary of the Top Four Suggestions for Handling English Problems

Suggestions for handling problems of English Use	No. responses
Reading problems	
Reading English regularly from reading materials such as newspapers, magazines, articles, fiction, books, etc.	29
Acquiring more vocabulary	8
Taking more English courses	4
Using a dictionary to find meanings of unfamiliar words	3
Writing problems	
Writing regularly in English (e.g. writing emails, reports, journals, etc.)	21
Acquiring more knowledge of sentence structure	6
Acquiring more grammatical knowledge	5
Acquiring more vocabulary	4
Listening problems	
Listening regularly to English from different media (e.g. songs, news, TV programs, movies, radios, series, English conversation CDs, etc.)	32
Taking more English conversation courses	5
Listening to many accents in order to be familiar with different sounds	3
Having conversations with foreigners or native English speakers	2
Speaking problems	
Speaking regularly in English (not clearly mentioned how to do)	12
Speaking English regularly by having conversations with native speakers at every opportunity	9
Taking more English conversation courses	7
Promote self-confidence in speaking by regular practice and regular conversation with native speakers	6

CHAPTER V

CONCLUSION AND DISCUSSION

This chapter presents four sections: conclusion, discussions based on the findings, limitations of the study, and recommendations for future research. The first section presents a conclusion drawn from the overall results of the study. The second section discusses the findings for each research question. The third section presents the limitations of the present study. In the last section, recommendations for future research in the field of ESP education are offered.

Conclusion

This study surveyed the English use and usage problems of 51 industrial pharmacists from two large multinational pharmaceutical manufacturers in Thailand. The research instrument was a questionnaire designed on the basis of a needs analysis framework (Hutchinson & Waters, 1987). This study aimed to answer three research questions: 1) to what extent do industrial pharmacists perform their routine tasks using the four English skills: reading, writing, listening, and speaking; 2) to what extent do Thai industrial pharmacists have problems with English usage in their routine work; and 3) what suggestions do they have for resolving the problems with English usage encountered in their routine work.

The findings indicate that reading is the most frequently used skill, followed by writing, listening and speaking. Amongst those four English skills, the specific communicative tasks that the Thai industrial pharmacists most commonly performed were: 1) reading emails, 2) writing emails, 3) reading validation protocols/reports, 4) reading pharmacopoeias and textbooks on pharmaceutical science and technology, and 5) reading procedural documents. A major problem with English usage lies in oral

communication skills. In written communication skills, the majority of problems were linguistic problems. By contrast, linguistic and sociolinguistic problems prevailed in oral communication skills. From real professional views, the most frequently suggested ways to solve English usage problems were: 1) regularly practicing English skills, 2) extending grammatical and vocabulary knowledge, 3) taking additional English courses, and 4) building self-confidence in speaking English.

Discussion

English skill use for Thai industrial pharmacists.

This survey study presents the four English skills used by Thai industrial pharmacists. The findings show that reading was the most frequently used skill. This can be explained by two plausible reasons. First, the complexity of reference documents that industrial pharmacists use demands that industrial pharmacists use reading skills on a regular basis. The technical documents (e.g., validation reports and procedural documents) that industrial pharmacists produce in their routine operations are science-based and technically complex. To ensure accurate and up-to-date information, they need to crosscheck and review scientific and technical references, textbooks, guides, and publications in the pharmaceutical fields that are available in English.

Second, email communication has become the most common channel of reading skill use in the pharmaceutical industry. Industrial pharmacists write emails to exchange technical information with international clients and health authorities for many reasons. First, technical documents are often too complicated to verbally explain face-to-face or on the phone. Therefore, leaving documents in emails for retrospective review is needed. In addition, some technical documents must be exchanged as documentary evidence, which is important to prove manufacturer compliance with certain regulatory or client requirements. Along a similar line, Evans (2010) found that emails were the most

important communication channels that promoted the English use of professionals in Hong Kong's service industries. The findings in this study showed that industrial pharmacists often read and wrote emails in English at work.

Reading skills were vital for professionals at hospitals and for industrial pharmacists. Previous studies on the English skill usage of professionals in the hospital context revealed the predominance of reading skills over other English skills. According to Phutirat & Suwannapatama (2007), hospital pharmacists expressed the greatest need for reading skills for routine work. Likewise, Thongtang (2009) found that reading skills were the most frequently used skills in the personal and professional lives of medical personnel. Along similar lines, the industrial pharmacists in this study rated reading as the most frequently used skill to perform their routine tasks.

However, the routine communicative tasks performed by industrial pharmacists were clearly distinct from those performed by hospital pharmacists in three aspects. First, the key conversational counterparts of hospital and industrial pharmacists came from different communities and had different social status. While hospital pharmacists communicate with foreign patients, industrial pharmacists communicate with different key conversational counterparts (e.g., colleagues, suppliers, auditors, clients and managers). Second, the oral communicative events in hospital and industrial contexts are different. While the oral communicative events in hospitals are mainly concerned with patient counselling, those in pharmaceutical manufacturers are mainly concerned with face-to-face or phone conversations with various non-Thai speaking people at work. Finally, the key written documents of industrial pharmacists (e.g., validation reports and procedural documents) were longer, more complicated, and required higher levels of writing skills.

The identified routine communicative tasks in this study have affirmed the existence of some gaps between the ESP curricula for pharmacy students and the real English needs within the pharmaceutical industry. Most ESP curricula for pharmacy students at university place an emphasis on academic reading and writing and oral communication in patient counselling. These curricula have not incorporated the various routine communicative events typically that take place in the workplace of industrial pharmacists (e.g., writing validations and instructional documents, oral communications with foreign colleagues, suppliers, managers, and customers in the workplace). Therefore, course developers should incorporate specific communicative scenarios from the pharmaceutical industry into the ESP curricula for pharmacy students in order to meet the real needs of industrial pharmacists in multinational settings.

In conclusion, the industrial pharmacists used reading skill most frequently for two plausible reasons: 1) the complexity of the reading reference materials that required the pharmacist's extensive reading skill use and 2) the role of email as the most common communication channel in multinational settings that promotes the reading skill use. This study also identified the routine communicative tasks that the industrial pharmacists commonly performed at work using the four English skills. Based on reviews of some current ESP curricula for pharmacy students, many key communicative tasks performed by industrial pharmacists have not been incorporated. Thus, more research should be conducted to obtain a more comprehensive understanding of English use in the pharmaceutical industry to enable ESP course designers to bridge the gaps between the academic curricula and the real industry needs.

Problems with English usage for Thai industrial pharmacists.

Oral communication skills, including listening and speaking skills, were the major problems highlighted for industrial pharmacists. The findings showed that listening skills were the greatest problem, followed by speaking skills. Writing skills were ranked in third place, while reading skills were the least significant problem. In accordance with findings from previous studies, oral communication skills were more problematic for hospital pharmacists (Phutirat & Suwannapatama, 2007) and automotive engineers (Hart-Rawung, 2008) than written communication skills.

The higher occurrence of oral communication problems may result from three plausible reasons. First, oral communication skills have been less developed than written communication skills because industrial pharmacists have fewer opportunities to engage in oral communication in the workplace, leading to a greater level of oral communication problems. This explanation is well supported by an argument by Scarcella (1990) stating that adult learners are often unsuccessful in developing their conversational competence due to limited exposure to the language.

Second, industrial pharmacists can easily complete self-study and have greater success at self-improvement in written communication skills. Basically, language learners can easily practice written communication skills by themselves, anywhere and at any time. For example, learners may practice written communication skills at work by reviewing language use in emails sent by native English speakers and at home by reading English newspapers or articles. By contrast, learners encounter greater difficulties with oral communication skills because this requires listeners and speakers to interact in conversations (Rubin & Thompson, 1994). Therefore, self-practice in oral communication skills is less likely to be successful.

Third, language anxiety may discourage industrial pharmacists from mastering oral communication skills. Stephan & Stephan (1992) noted that people who become anxious when attempting to communicate with different people often avoid interacting in conversations to reduce anxiety. Along the same lines, Tanveer (2007) demonstrated that socio-cultural factors (e.g., social status, cultural differences) may create language anxiety, which is a huge obstacle for the development of oral communication skills in ESL/EFL learners. Thus, it is probable that language anxiety hinders industrial pharmacists in regard to mastering oral communication skills, and this leads to greater levels of oral communication problems.

Industrial pharmacists have both linguistic and sociolinguistic problems. In written communication skill use, the majority of problems result from linguistic issues, such as inadequate vocabulary and grammatical knowledge. By contrast, linguistic and sociolinguistic problems are important issues in oral communication. Apart from linguistic problems, such as trouble with word choice, accents, pronunciation, and rapid speech, industrial pharmacists rated some sociolinguistic problems, such as entering discussions politely and language anxiety, amongst the top three oral communication problems. This may reflect that industrial pharmacists lack all three components in a communicative competence framework, including grammatical, sociolinguistic, and strategic competence (Canale & Swain, 1980).

Based on these findings, university ESP curricula for pharmacy students should be revised to focus more on the oral communication skills employed in the pharmaceutical industry context. Most current university ESP curricula for pharmacy students focused primarily on developing the four skills of language and English use in pharmacist-patient counselling. In multinational pharmaceutical manufacturers, industrial pharmacists needed to use English to communicate with overseas colleagues, suppliers,

customers and auditors in a variety of situations, such as email communication, face-to-face and telephone conversations, internal meetings, audit events, and the routine use of technical documents including validation reports and procedural documents. These oral communicative scenarios should be incorporated into ESP curricula so that pharmacy students wishing to work in a multinational pharmaceutical setting can use English appropriately and professionally in their future careers.

In addition to focusing on oral communication skills, ESP curricula for pharmacy students should have an optimal balance among the three components of communicative competence. To engage in oral communications in a socially appropriate way, industrial pharmacists cannot only have grammatical competence. To be professional, they should also have adequate sociolinguistic competence and sociocultural knowledge in order to offer ideas in meetings, enter discussions, and negotiate audit findings with auditors in an assertive yet polite way. Furthermore, industrial pharmacists should be able to use the appropriate English for professional people with higher social status, such as managers, auditors, and customers. Therefore, to overcome oral communication problems and use English appropriately in the industrial setting, industrial pharmacists should acquire all three components of communicative competence

In sum, the present study has revealed that oral communication skills were a major problem for industrial pharmacists. The dominance of oral communication problems most likely resulted from three reasons: fewer opportunities to use oral communication skills in the workplace, greater difficulties with self-practice for oral communication skills, and the impact of language anxiety. This study indicated oral communication problems as a weakness that ESP course designers should address by placing an emphasis on developing ESP curricula that are more specific to the real English needs in the pharmaceutical industry.

Suggestions for addressing the problems with English usage.

Industrial pharmacists suggested various ways to solve their problems with English usage. These suggestions could be grouped into three categories: self-improving of English skills through routine practice, attending additional English courses for professional purposes, and using translation software from the Internet.

In the view of the industrial pharmacists, the regular practice of English skills was overwhelmingly dominant compared to other suggestions. In accordance with Thai engineers in the study of Chalardsit (2007), most industrial pharmacists in the present study strongly advocated that regular efforts to read, write, listen to, and speak English were useful ways for minimising English usage problems. For solving speaking problems, industrial pharmacists believed that seeking opportunities to engage in real conversations with native English speakers was very important.

Extending vocabulary and grammatical knowledge was another key suggestion for reducing written communication problems. Although many industrial pharmacists did not clearly state how to solve the problems, this suggestion well reflected some gaps between their competencies and needs for vocabulary and grammatical knowledge to completely fulfil their job requirements.

To handle oral communication problems, industrial pharmacists believed that they have to build self-confidence to speak English. This finding was well supported by the results that showed that anxiety to speak with foreigners was ranked second among speaking problems. In addition, many industrial pharmacists believed that taking additional short and intensive English courses was another effective way to solve their problems.

The findings implied that solving English usage problems in the work life of industrial pharmacists remains challenging for employers and for pharmacists themselves.

Industrial pharmacists should take every opportunity to practice English skills because adequate English proficiency for working in multinational settings cannot be attained in a short period of time. To encourage the mastery of oral communication skills, employers should find creative ways to provide industrial pharmacists with greater opportunities to use English in the workplace, such as forming English clubs to promote cultural exchanges and language learning, undertaking English proficiency assessments and designing incentive programs for ongoing improvement of English skills, e.g., giving rewards. Some researchers (Burt, 2003; McHugh & Challinor, 2011) offered useful suggestions to solve the English usage problems of employees, such as providing short, measureable, and highly work-focused English courses, and hiring native English speaking staff to be mentors or tutors in the workplace.

In summary, the findings in this section offered a number of practical suggestions to solve the English usage problems of industrial pharmacists. These suggestions are helpful for industrial pharmacists and pharmacy students who are preparing to work in multinational workplaces in the pharmaceutical industry.

Limitations of the Study

The scope of this research has highlighted three limitations. First, the present study was a rather small one conducted among industrial pharmacists in the two selected pharmaceutical manufacturers. Therefore, the results should not be generalised to industrial pharmacists in other multinational manufacturers as well as those pharmacists in other pharmaceutical sectors (e.g., hospital and community pharmacy). Second, the reliability of the data may be limited because the data were gathered by self–reporting, which may contain several potential sources of bias, including selective memory, telescoping, and exaggeration (Brutus et al., 2013). Third, based on the needs analysis

framework of Hutchinson & Waters (1987), the findings in this study offer only some insights into the necessities and lacks that are only parts of a target situation analysis. Unfortunately, this study was still unable to determine the learning needs as well as the learner wants that are a remaining part of target needs analysis. Nevertheless, the present study offers opportunities for future work.

Recommendations for Future Studies

This study presents several recommendations for future research. Because the present study was a rather small one, broader research on multinational pharmaceutical manufacturers and industrial pharmacists should be conducted. This could provide pharmaceutical educators and ESP course designers with a better understanding of target English situations in the pharmaceutical industry.

Based on self-reporting data, this study has a limitation with respect to reliability. Future research using other types of data collection (e.g., on-the-job observations, participant interviews, and a review of manufacturer documentation), should be undertaken in order to provide other sources of data.

This study offered only the initial phase of target situation needs analysis, which identifies what learners need to do in target situations (Hutchinson & Waters, 1987). Further research on learning needs and ESP curricula for pharmacy students at the university level will be more helpful for identifying the teaching and learning methods in ESP curricula that could be more successful in encouraging pharmacy students to use English professionally and confidently in their future careers.

While the pharmaceutical profession has a wide variety of job responsibilities beyond pharmaceutical manufacturing, this study focused only on industrial pharmacists working for pharmaceutical manufacturers. More future studies on pharmacists in other

pharmaceutical sectors, such as multinational drug companies and educational institutions, could obtain a more comprehensive understanding of the English usage and problems of the pharmaceutical profession.

Finally, English usage and associated problems of personnel within the same profession may be different depending upon the different situational factors of each individual worker, such as job positions and work experience (Chalardsit, 2007). This study cannot make clear differences between individual pharmacists with different job levels. Thus, more research should be conducted to recognise the difference between the English use and usage problems of non-managerial and managerial pharmacists, which may provide helpful data for pharmacists on the subject of the relevant English skills needed to advance their professional careers and attain job promotions.

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APPENDICES

APPENDICES

Appendix A: A glossary of Pharmaceutical Terminology

Appendix B: Abbreviations

Appendix C: Examples of Course Syllabus of English for Specific Purposes for Pharmacy students

Appendix D: Questionnaire (Thai Version)

Appendix E: Questionnaire (English Version)

APPENDIX A

A glossary of Pharmaceutical Terminology

Audit

An audit refers to a "systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which agreed criteria are fulfilled" ("Audit", n.d.).

During audits, industrial pharmacists need to use the four English skills (reading, writing, listening, and speaking) to communicate with foreign auditors in many communicative events, such as greetings before starting audits, answering auditors' questions about their responsibilities and tasks to show evidence of compliance with certain requirements, attending audit wrap-up meetings, reading audit reports, and writing a response to audit findings.

Cleaning Validation

A cleaning validation is "the methodology used to assure that a cleaning process removes residues of the active pharmaceutical ingredients of the product manufactured in a piece of equipment, the cleaning aids utilised in the cleaning process and the microbial attributes" ("Cleaning validation", n.d.).

Industrial pharmacists most frequently use reading and writing skills for preparation of cleaning validation protocols and reports, which are the documentary evidence proving that a cleaning process is capable of removing undesirable residues from production machines.

Drug Registration

A drug registration is "a system that subjects all pharmaceutical products to pre-marketing evaluation, marketing authorisation, and post-marketing review to ensure that they conform to required standards of quality, safety, and efficacy established by national authorities. The outcome of the drug registration process is the issuance or the denial of a pharmaceutical product marketing authorisation or licence" ("Drug registration", 1998)

Industrial pharmacists use English skills in several steps of the drug registration process. For example, some pharmacists in a Quality Control department may need to use reading skills to review their reference pharmacopoeias in order to produce the many types of dossiers (e.g., product specifications, test methods, and raw material specifications) that are needed for submission to the health authorities of overseas target markets. Some pharmacists in a Regulatory Affairs department use speaking and listening skills to follow up on the progress of the dossiers submitted to foreign authorities in the target markets.

Qualification

A qualification is "an action of proving and documenting that equipment or ancillary systems are properly installed, work correctly, and actually lead to the expected results. Qualification is part of validation, but the individual qualification steps alone do not constitute process validation" ("Qualification", n.d.).

Industrial pharmacists use reading and writing skills in many steps of the qualification process. At an early stage, reading skills are used to understand the qualification guidance in previous qualification documents or pertinent reference textbooks. Next, pharmacists may use writing skills in the preparation of qualification protocols, which are written plans stating how to conduct a qualification and what parameters are to be tested. Finally, when qualification activities are carried out, they use writing skills to establish qualification reports to prove that systems or equipment under qualification are properly installed and operate correctly.

GMP (Good Manufacturing Practice)

A GMP is "a system for ensuring that products are consistently produced and controlled according to quality standards. It is designed to minimise the risks involved in

any pharmaceutical production that cannot be eliminated through testing the final product" ("GMP", n.d.)

Industrial pharmacists have to perform their routine tasks in ways that comply with GMP. Thus, they need to use reading skills to understand GMP requirements in order to work and supervise their subordinates to carry out work activities in full compliance with the applicable GMP requirements of target markets.

Pharmacopoeia

A pharmacopoeia is "a book published usually under the jurisdiction of the government and containing a list of drugs, their formulas, methods for making medicinal preparations, requirements and tests for their strength and purity, and other related information" ("Pharmacopoeia", n.d.).

Industrial pharmacists, particularly those who work in a quality control function, often need to use reading skills to understand information concerning target drugs or raw materials as reference for their quality control tasks, such as testing products and raw material, or updating certain general testing methods.

Procedural Document

A procedural document refers to "document describing a set of specific steps that describe how an activity should be carried out, and by whom" ("Procedural document", n.d.). Examples of procedural documents are Standard Operating Procedure (SOP) and Work Instructions (WI).

Industrial pharmacists use reading and writing skills to establish and revise procedural documents. In multinational manufacturers, industrial pharmacists must read reference materials, such as machine manuals, pharmacopoeias, and textbooks, to understand how to carry out activities properly and use writing skills to establish SOP/WI in Thai to be reference documents for their subordinates on how to do their work properly

and correctly. Sometimes, industrial pharmacists may write procedural documents in both Thai and English so that foreign auditors or clients may also read and understand during audits or visits.

Quality Assurance (QA)

Quality assurance is “the activity of, or group responsible for, ensuring that all materials, personnel, facilities, and systems are of the quality required for their intended use or role and that effective quality systems are maintained” (“Quality Assurance”, n.d.).

Quality Control (QC)

Quality control is “a system for verifying and maintaining a desired level of quality in an existing product or service by careful planning, use of proper equipment, continued inspection, and corrective action as required” (“Quality Control”, n.d.).

Specification

A specification is “a list of tests, references to analytical procedures, and appropriate acceptance criteria which are numerical limits, ranges, or other criteria for the tests described. It establishes the set of criteria to which a new drug substance or new drug product should conform to be considered acceptable for its intended use” (“Specification”, 2000).

According to GMP requirements, industrial pharmacists in QC or QA departments need to prepare specifications for products or materials. These require pharmacists to make extensive use of reading skills in the review of pharmacopoeias and use of writing skills for preparing specifications.

Validation

Validation refers to “establishing documented evidence which provides a high degree of assurance that a specific process will consistently produce a product meeting its predetermined specifications and quality attributes” (“Validation”, n.d.)

Industrial pharmacists most frequently use reading and writing skills in the validation process. First, they need to use reading skills to understand previous validation documents or relevant reference textbooks on the validation of target processes or systems prior to establishing a validation protocol. After validation activities are carried out, they use writing skills to establish a validation report summarising the results and conclusions of a validation. Processes in which industrial pharmacists usually take part in the validation, for example, are cleaning validation and product validation.

APPENDIX B

A list of abbreviations

List of Abbreviations

ACTD	ASEAN Common Technical Dossier
ACTR	ASEAN Common Technical Requirements
BP	British Pharmacopoeia
DQ	Design Qualification
FT-IR	Fourier Transform Infrared Spectroscopy
GC	Gas Chromatograph
GMP	Good Manufacturing Practice
HPLC	High Performance Liquid Chromatograph
IQ	Installation Qualification
JP	Japanese Pharmacopoeia
OQ	Operational Qualification
Ph. Eur	European Pharmacopoeia
PIC/s	Pharmaceutical Inspection Co-operation Scheme
PQ	Performance Qualification
SOP	Standard Operating Procedure
TP	Thai Pharmacopoeia
USP	United States Pharmacopoeia
WI	Work Instruction

APPENDIX C

Examples of Course Syllabus of English for Specific Purposes for Pharmacy students

Language Institute
Thammasat University
EL 311 English for Health Science 2
Course Outline 2/2013

Course Description

A course to practice listening to lectures, academic discussions, writing correspondence, writing medical certificates and medical articles, communicating in English with co-workers, patients and relatives.

Course Objectives

This EL 311: English for Health Science II aims to:

1. To develop students' technical communication skills in English to cope with various communication situations.
2. To expose students to various learning experience in the context of health science.
3. To enable students to develop their integrated skills of English, which include reading, listening, speaking, and writing.

Course evaluation

Attendance	10	points
Assignments*	20	points
Midterm Examination	40	points
Listening Test	20	points
Final Examination	60	points
Total	**150**	**points**

***Assignments** (20 points) will include two paragraph writing assignments (10 points), each of which is worth 5 points plus two in-class presentations (10 points) chosen from the end-of-lesson tasks in each unit.

Class dates:

Class starts: Monday 4, November, 2013
Class ends: Monday 17, February, 3014

Midterm Examination	**December 23, 2013**	**(14:30—16:30)**
Listening Test	**March 4, 2014**	**(16:00—16:30)**
Final Examination	**March 4, 2014**	**(13:00—16:00)**

Textbook

EL 311: English for Health Science II, by Asst. Prof. Tanom Tiensawangchai, Language Institute, Thammasat University. (2013)

Attendance Policy

Students must have at least 80% attendance in order to be eligible for the Final Exam. They are advised to be strictly punctual for every class. There is a 15-minute break in the middle of the session.

Instructors

Sec/Gr	Day	Time	Room	Instructor
8200/01	Monday	13.30 - 16.30	SC 3047	Asst. Prof. Tanom Tiensawangchai

Weekly Teaching Schedule (November, 2013—February, 2014)

Week/Day	Topics to cover
Week 1: Mon. 4, Nov. 2013	Course Introduction and Unit 1: Why People Lose Their Memories (pages 1-7)
Week 2: Monday 11, Nov. 2013	Unit 1: Why People Lose Their Memories (pages 8—21) + HW
Week 3: Monday 18, Nov. 2013	Unit 2: The Miracle of the Okinawan Diet (pages 22—27)
Week 4: Monday25, Nov. 2013	Unit 2: The Miracle of the Okinawan Diet (pages 28—44)
Week 5: Monday 2, Dec. 2013	Unit 3: Cutting Edge Dentistry (pages 45--51) Finish the Listening Task.
Week 6: Monday 9, Dec. 2013	Unit 3: Cutting Edge Dentistry (pages 51—64)
Week 7: Monday 16, Dec. 2013	Midterm Examination Review
Week 8: **MONDAY 23 Dec. 2013**	**Midterm Examination** (14:30—16:30)
Week 9: Monday 6, Jan. 2014	Unit 4: Physiotherapy (pages 65—71)
Week 10: Monday 13, Jan. 2014	Unit 4: Physiotherapy (pages 72—82)
Week 11: Monday 20, Jan. 2014	Unit 5: Bacchus and the Miracle of His Magic Drink (pages 83—89)
Week 12: Monday 27, Jan. 2014	Unit 5: Bacchus and the Miracle of His Magic Drink (pages 90—103)
Week 13: Monday 3, Feb. 2014	Unit 6: Can We Stop Breast Cancer? (pages 104—111)
Week 14: Monday 10, Feb. 2014	Unit 6: Can We Stop Breast Cancer? (pages 112—124)
Week 15: Monday 17, Feb. 2014	Final Examination and Listening Comprehension Test Reviews
Week 16: **TUESDAY 4 MARCH 14**	**Final Examination**(13:00—16:00) **Listening Comprehension** Test (16:00—16:30)

มคอ. 2

หลักสูตรเภสัชศาสตรบัณฑิต
(หลักสูตรปรับปรุง พ.ศ. 2556)

ชื่อสถาบันอุดมศึกษา มหาวิทยาลัยขอนแก่น
วิทยาเขต/คณะ/ภาควิชา คณะเภสัชศาสตร์ มหาวิทยาลัยขอนแก่น

หมวดที่ 1. ข้อมูลทั่วไป

1. **รหัสและชื่อหลักสูตร**
   ภาษาไทย: เภสัชศาสตรบัณฑิต
   ภาษาอังกฤษ: Doctor of Pharmacy Program
2. **ชื่อปริญญาและสาขาวิชา**
   ชื่อเต็ม (ภาษาไทย): เภสัชศาสตรบัณฑิต
   ชื่อย่อ (ภาษาไทย): ภ.บ.
   ชื่อเต็ม (ภาษาอังกฤษ): Doctor of Pharmacy
   ชื่อย่อ (ภาษาอังกฤษ): Pharm.D.
3. **วิชาเอก**
   -
4. **จำนวนหน่วยกิตที่เรียนตลอดหลักสูตร**
   228 หน่วยกิต
5. **รูปแบบของหลักสูตร**
   5.1 รูปแบบ
   เป็นหลักสูตรระดับปริญญาตรี หลักสูตร 6 ปี ตามเกณฑ์มาตรฐานหลักสูตรระดับอุดมศึกษา
   5.2 ภาษาที่ใช้
   ภาษาไทยและภาษาอังกฤษ
   5.3 การรับเข้าศึกษา
   รับนักศึกษาไทย หรือนักศึกษาต่างประเทศที่สามารถใช้ภาษาไทยได้เป็นอย่างดี
   5.4 ความร่วมมือกับสถาบันอื่น
   เป็นหลักสูตรเฉพาะของสถาบันที่จัดการเรียนการสอนโดยตรง
   5.5 การให้ปริญญาแก่ผู้สำเร็จการศึกษา
   ให้ปริญญาเพียงสาขาวิชาเดียว
6. **สถานภาพของหลักสูตรและการพิจารณาอนุมัติ/เห็นชอบหลักสูตร**
   เป็นหลักสูตรปรับปรุง พ.ศ. 2556 ปรับปรุงจากหลักสูตรเภสัชศาสตรบัณฑิต พ.ศ. 2552
   คณะกรรมการกลั่นกรองหลักสูตรของมหาวิทยาลัย เห็นชอบในการประชุมครั้งที่ 7/2555 เมื่อวันที่ 13 กุมภาพันธ์ 2555
   สภามหาวิทยาลัย อนุมัติหลักสูตร ในการประชุมครั้งที่ 1/2556 วันที่ 9 มกราคม 2556
   เปิดสอน ภาคการศึกษาที่ 1 ปีการศึกษา 2556
7. **ความพร้อมในการเผยแพร่หลักสูตรที่มีคุณภาพและมาตรฐาน**
   หลักสูตรมีความพร้อมเผยแพร่ว่าเป็นหลักสูตรที่มีคุณภาพและมาตรฐาน ตามกรอบมาตรฐานคุณวุฒิระดับอุดมศึกษาแห่งชาติ ในปีการศึกษา 2559

000 145	ภาวะผู้นำและการจัดการ	3(3-0-6)
	Leadership and Management	
000 171	ชีวิตกับสุขภาพ	3(3-0-6)
	Healthy life	
000 172	ชีวิตกับสิ่งแวดล้อม	3(3-0-6)
	Life and Environment	
	รวมจำนวนหน่วยกิตลงทะเบียนเรียน	20
	รวมจำนวนหน่วยกิตสะสม	40
ปีที่ 1 ภาคการศึกษาพิเศษ		
361 216	กายวิภาคของมนุษย์	4(3-4-0)
	Human Anatomy	
	รวมจำนวนหน่วยกิตลงทะเบียนเรียน	4
	รวมจำนวนหน่วยกิตสะสม	44
ปีที่ 2 ภาคการศึกษาที่ 1		
000 103	ภาษาอังกฤษทางวิชาการ 2	3(3-0-6)
	English for Academic Purposes II (EAP II)	
362 216	จุลชีววิทยาสำหรับนักศึกษาเภสัชศาสตร์	4(3-3-1)
	Microbiology for Pharmaceutical Science Students	
**363 216	ชีวเคมีสำหรับนักศึกษาเภสัชศาสตร์	4(3-4-1
	Biochemistry for pharmaceutical Science Students	
364 216	ปรสิตวิทยาสำหรับนักศึกษาเภสัชศาสตร์	2(1.5-2-0)
	Parasitology for Pharmaceutical Science Students	
632 101	เคมีเชิงเภสัชศาสตร์ขั้นพื้นฐาน	3(2-3-6)
	Basic Pharmaceutical Chemistry	
**632 102	พื้นฐานทางเภสัชการ	1(1-0-2)
	Basic in Pharmaceutics	
*632 308	ปฏิบัติการพื้นฐานทางเภสัชการ	1(0-3-2)
	Basic in Pharmaceutics Laboratory	
	รวมจำนวนหน่วยกิตลงทะเบียนเรียน	18
	รวมจำนวนหน่วยกิตสะสม	62
ปีที่ 2 ภาคการศึกษาที่ 2		
367 216	สรีรวิทยาสำหรับนักศึกษาเภสัชศาสตร์	4(3-4-0)
	Physiology for Pharmaceutical Science students	
631 308	วิธีวิจัยทางเภสัชศาสตร์ 1	2(2-0-4)
	Research Methods in Pharmaceutical Sciences I	
632 201	การวิเคราะห์ยา 1	3(2-3-6)
	Pharmaceutical Analysis I	
**632 301	เภสัชการ 1	2(2-0-4)

312 234	เคมีฟิสิกัลเชิงชีวภาพ Biophysical Chemistry	3(2-3-6)
315 122	ฟิสิกส์ระดับมหาวิทยาลัย University Physics	3(3-0-6)
315 181	ปฏิบัติการฟิสิกส์ทั่วไป 1 General Physics Laboratory I	1(0-3-0)
*314 103	คณิตศาสตร์สำหรับวิทยาศาสตร์สุขภาพ Mathematics for Health Science	3(3-0-6)
(2)	**กลุ่มวิชาพื้นฐานวิชาชีพ**	**21 หน่วยกิต**
361 216	กายวิภาคของมนุษย์ Human Anatomy	4(3-4-0)
362 216	จุลชีววิทยาสำหรับนักศึกษาเภสัชศาสตร์ Microbiology for Pharmaceutical Science Students	4(3-3-1)
**363 216	ชีวเคมีสำหรับนักศึกษาเภสัชศาสตร์ Biochemistry for Pharmaceutical Science Students	4(3-4-1)
364 216	ปรสิตวิทยาสำหรับนักศึกษาเภสัชศาสตร์ Parasitology for Pharmaceutical Science Students	2(1.5-2-0)
**365 316	พยาธิวิทยาสำหรับนักศึกษาเภสัชศาสตร์ Pathology for Pharmaceutical Science Students	3(3-0-6)
367 216	สรีรวิทยาสำหรับนักศึกษาเภสัชศาสตร์ Physiology for Pharmacy Science Students	4(3-4-0)
(3)	**กลุ่มวิชาชีพบังคับ**	**110 หน่วยกิต**
**366 316	เภสัชวิทยา 1 สำหรับนักศึกษาเภสัชศาสตร์ Pharmacology I for Pharmaceutical Sciences Students	4(3-3-0)
**366 326	เภสัชวิทยา 2 สำหรับนักศึกษาเภสัชศาสตร์ Pharmacology II for Pharmaceutical Sciences Students	4(3-3-0)
**631 101	นิเทศเภสัชศาสตร์ Pharmacy Orientation	1(1-0-2)
631 102	ภาษาอังกฤษเชิงวิชาชีพสำหรับเภสัชกร Professional English for Pharmacist	3(2-3-6)
631 201	การศึกษาชุมชนสำหรับเภสัชศาสตร์ Community Study for Pharmacy	2(1-3-4)
631 202	นิติเภสัชศาสตร์ Pharmacy Jurisprudence	2(2-0-4)
631 203	พฤติกรรมสุขภาพและการสื่อสารทางเภสัชกรรม Health Behavior and Communication in Pharmacy	2(2-0-4)
631 301	ชีวเภสัชกรรม Biopharmaceutics	3(3-0-6)

รวมจำนวนหน่วยกิตลงทะเบียนเรียน	28
รวมจำนวนหน่วยกิตสะสม	228

3.1.5 คำอธิบายรายวิชา

**000 101 ภาษาอังกฤษเพื่อการสื่อสาร 3(3-0-6)

English for Communication

เงื่อนไขของรายวิชา : ไม่มี

การพัฒนาทักษะการฟัง พูด อ่านและเขียนภาษาอังกฤษ เพื่อให้สามารถสื่อสารในสถานการณ์ต่างๆ ในสังคมได้

Development of listening, speaking, reading and writing English language skills for communication in social settings.

**000 102 ภาษาอังกฤษทางวิชาการ 1 3(3-0-6)

English for Academic Purposes I (EAP I)

เงื่อนไขของรายวิชา : 000 101 หรือเทียบเท่า

การพัฒนาทักษะภาษาอังกฤษขั้นพื้นฐาน เพื่อให้บรรลุเป้าหมายของตนเองและทางวิชาการ และส่งเสริมให้เกิดการเรียนรู้ตลอดชีวิต

Development of basic English language skills to help achieve personal and academic goals and to promote life-long learning.

**000 103 ภาษาอังกฤษทางวิชาการ 2 3(3-0-6)

English for Academic Purposes II (EAP II)

เงื่อนไขของรายวิชา : 000 102 หรือ เทียบเท่า

การพัฒนาทักษะภาษาอังกฤษขั้นสูง เพื่อให้บรรลุเป้าหมายของตนเองและทางวิชาการ และส่งเสริมให้เกิดการเรียนรู้ตลอดชีวิต

Development of advanced English language skills to help achieve personal and academic goals and to promote life-long learning.

**000 130 ทักษะการรู้สารสนเทศ 3 (3-0-6)

Information Literacy Skills

เงื่อนไขของรายวิชา : ไม่มี

การรู้สารสนเทศกับการศึกษาระดับอุดมศึกษา กระบวนการการพัฒนาทักษะการเรียนรู้ด้านสารสนเทศ ได้แก่ การให้ความหมายและการวิเคราะห์ความต้องการสารสนเทศ การคัดเลือกแหล่งสารสนเทศ กลยุทธ์การค้นและทักษะการค้นสารสนเทศ การประเมินคุณค่าของสารสนเทศ การวิเคราะห์และสังเคราะห์สารสนเทศ การเรียบเรียงและนำเสนอสารสนเทศในรูปแบบต่างๆ

Information literacy and higher education, information literacy skills development processes include; defining and analyzing the need for information, selecting sources of information, search strategies and information searching skills, evaluation of information values, information analysis and synthesis, information composition and presentation in various

education, basic concepts of public health system, roles of pharmacists according to health system of Thailand, ethics for pharmacists in professional practices.

631 102 ภาษาอังกฤษเชิงวิชาชีพสำหรับเภสัชกร 3(2–3–6)
Professional English for Pharmacist
เงื่อนไขของรายวิชา : ไม่มี

องค์ประกอบและทักษะสำคัญด้านภาษาอังกฤษ ที่จำเป็นต่อความสามารถในการสื่อสารและการปฏิบัติงาน ด้านวิชาชีพเภสัชกรรมอย่างมีประสิทธิภาพในยุคปัจจุบัน การฟังเนื้อหาสาระทางวิชาการทั้งเชิงธุรกิจและเชิงวิชาการ การอ่านบทความวิจัย เอกสารวิชาการ การเขียนจดหมายโต้ตอบเพื่อการสมัครงาน การเขียนโครงการวิจัย การเขียนรายงาน การนำเสนอข้อมูลทางผลิตภัณฑ์หรือผลงานทั้งที่เป็นบทความและเป็นโปสเตอร์ รวมทั้งการนำเสนอในรูปแบบสื่อสารสนเทศอื่นๆ การพูดในที่ชุมชน

Essential English components and skills for effective communication and professional pharmacy work in modern time. Listening experience to business and academic presentation. Reading research articles and relevant health-related documents. Writing for a job, research proposal, reports. Presentation of pharmaceutical products or research work as printed papers, posters or other means of information. Speaking in public.

631 201 การศึกษาชุมชนสำหรับเภสัชศาสตร์ 2(1-3-4)
Community Study for Pharmacy
เงื่อนไขของรายวิชา : ไม่มี

การศึกษา เรียนรู้ชุมชน ต่อปัญหาทางสุขภาพ การใช้ยาและผลิตภัณฑ์สุขภาพของประชากร การศึกษาบริบทและปัจจัยต่างๆ ที่ส่งผลต่อวิธีคิดและพฤติกรรมที่สัมพันธ์ต่อสุขภาพ

Study and learning community about of health problem, drug and health products use in community, study context and factors affecting to the way of thinking related to health.

631 202 นิติเภสัชศาสตร์ 2 (2–0–4)
Pharmacy Jurisprudence
เงื่อนไขของรายวิชา : ไม่มี

หลักการของกฎหมายและกระบวนการออกกฎหมาย การบังคับใช้กฎหมายที่เกี่ยวข้องกับยา ยาเสพติด วัตถุออกฤทธิ์ต่อจิตและประสาท อาหาร เครื่องสำอาง ผลิตภัณฑ์สุขภาพ การบริการด้านสุขภาพ การประกอบวิชาชีพเภสัชกรรม กฎหมายที่เกี่ยวข้องกับการคุ้มครองผู้บริโภค สิทธิผู้บริโภคและสิทธิผู้ป่วย ความตกลงระหว่างประเทศที่มีผลกระทบกับกฎหมายที่ควบคุมผลิตภัณฑ์สุขภาพ และการบริการสุขภาพในประเทศไทย กฎหมายที่เกี่ยวข้องกับการสร้างเสริมสุขภาพ กฎหมายใหม่ที่เกี่ยวข้องกับระบบสุขภาพ

Principles of laws and legislation process, law enforcement related to pharmaceuticals, narcotic drugpsychotropic substances, food, cosmetics, health products, health services, practice of pharmacy profession. Laws related to consumer protection, consumer rights and patient rights. The international agreements which affect health products and health services laws in Thailand. Laws related to health promotion. New legislations which

แบบ วช.04

รายละเอียดของรายวิชา

1. รหัสและชื่อวิชา

*631 102 ภาษาอังกฤษเชิงวิชาชีพสำหรับเภสัชกร 3(2-3-6)

Professional English for Pharmacist

2. จำนวนหน่วยกิต

3 หน่วยกิต (บรรยาย 2 ชม.ต่อสัปดาห์ ปฏิบัติการ 3 ชม.ต่อสัปดาห์ ศึกษาด้วยตนเอง 6 ชม.ต่อสัปดาห์)

3. สังกัดวิชา

สาขาวิชาเภสัชกรรมปฏิบัติ คณะเภสัชศาสตร์

4. คำอธิบายรายวิชา (Course description)

องค์ประกอบและทักษะสำคัญด้านภาษาอังกฤษ ที่จำเป็นต่อความสามารถในการสื่อสารและการปฏิบัติงาน ด้านวิชาชีพเภสัชกรรมอย่างมีประสิทธิภาพในยุคปัจจุบัน การฟังเนื้อหาสาระทางวิชาการทั้งเชิงธุรกิจ และเชิงวิชาการ การอ่านบทความวิจัย เอกสารวิชาการ การเขียนจดหมายได้ตอบเพื่อการสมัครงาน การเขียนโครงการวิจัย การเขียนรายงาน การนำเสนอข้อมูลทางผลิตภัณฑ์หรือผลงานทั้งที่เป็นบทความและเป็นโปสเตอร์รวมทั้งการนำเสนอในรูปแบบสื่อสารสนเทศอื่นๆ การพูดในที่ชุมชน

Essential english components and skills for effective communication and professional pharmacy work in modern time. Listening experience to business and academic presentation. Reading research articles and relevant health-related documents. Writing for a job, research proposal, reports. Presentation of pharmaceutical products or research work as printed papers, posters or other means of information. Speaking in public.

5. เงื่อนไขของรายวิชา (Prerequisite)

ไม่มี

6. ประเภทวิชา

เป็นวิชาบังคับในกลุ่มวิชาพื้นฐานวิชาชีพ สำหรับหลักสูตรเภสัชศาสตรบัณฑิต

7. ภาคการศึกษาที่เปิดสอน และปีการศึกษาที่จะเริ่มเปิดสอน

เปิดสอนประจำภาคการศึกษาปลาย เริ่มตั้งแต่ปีการศึกษา 2555 เป็นต้นไป

8. อาจารย์ผู้สอน

มณีรัตน์ เลย์ตัน และคณะ

แบบ วช. 05

(เค้าโครงรายวิชา)

Course outline

***631 102 ภาษาอังกฤษเชิงวิชาชีพสำหรับเภสัชกร 3(2-3-6)**

Professional English for Pharmacist

Topic	Hours	
	Lecture	Laboratory
1. Introduction to the origin of English use in health sciences - Pharmacy terminology - Medical terminology	2	3
2. Essential English for Communication in pharmacy practice - Dispensing - Patient counseling - Patient education	4	6
3. Professional reading and critical appraisal	4	6
4. Academic Writing in Pharmaceutical Science and Practice • Scientific reports and laboratory records • Manuscripts	6	9
5. Business Writing • Business Correspondence • Writing Employment Messages	4	6
6. Speeches and Oral Presentations	4	6
7. Poster Presentations	2	3
8. Key Success Factors for Job Interviews	4	6
Total	**30**	**45**

APPENDIX D
Questionnaire (Thai Version)

แบบสอบถาม

เรื่อง

ปัญหาในการใช้ภาษาอังกฤษของเภสัชกรการอุตสาหกรรม
ในโรงงานผลิตยาในข้ามชาติขนาดใหญ่ 2 แห่งในประเทศไทย

การศึกษานี้เป็นส่วนหนึ่งของสารนิพนธ์ หลักสูตรศิลปศาสตรมหาบัณฑิต (ศศ.ม.) สาขาภาษาอังกฤษธุรกิจเพื่อการสื่อสารนานาชาติ มหาวิทยาลัยศรีนครินทรวิโรฒ แบบสอบถามชุดนี้มีวัตถุประสงค์เพื่อศึกษาปัญหาการใช้ภาษาอังกฤษทั้ง 4 ทักษะ ได้แก่ ฟัง พูด อ่าน และเขียน ของเภสัชกรการอุตสาหกรรมในโรงงานผลิตยา ข้อมูลที่ได้รับจากการตอบแบบสอบถามจะเป็นประโยชน์อย่างยิ่งในการนำมาวิเคราะห์เพื่อหาแนวทางในการพัฒนาหลักสูตรภาษาอังกฤษและแก้ไขปัญหาในการใช้ภาษาอังกฤษสำหรับวิชาชีพเภสัชกรรมต่อไป

คำตอบของท่าน ถือเป็นความลับและจะนำเสนอเฉพาะข้อมูลในภาพรวมเท่านั้น ขอความกรุณาตอบคำถามให้ครบถ้วนทุกหัวข้อ และหวังเป็นอย่างยิ่งว่าจะได้รับความร่วมมือจากท่าน

คำชี้แจง แบบสอบถามนี้มีทั้งหมด 8 หน้าและแบ่งออกเป็น 4 ส่วนดังนี้
ส่วนที่ 1 ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม
ส่วนที่ 2 ข้อมูลเกี่ยวกับการใช้ภาษาอังกฤษในการปฏิบัติงาน
ส่วนที่ 3 ปัญหาเกี่ยวกับการใช้ภาษาอังกฤษในการปฏิบัติงาน
ส่วนที่ 4 ข้อแนะนำในการแก้ไขปัญหาจากการใช้ภาษาอังกฤษในการปฏิบัติงาน

ขอแสดงความขอบคุณมา ณ โอกาสนี้

(นางสาวลักขณา ศรีสุวรรณ)
สาขาภาษาอังกฤษธุรกิจเพื่อการสื่อสารนานาชาติ
คณะมนุษยศาสตร์ มหาวิทยาลัยศรีนครินทรวิโรฒ

****ขอความร่วมมือส่งแบบสอบถามคืนภายในวันที่ 31 พฤษภาคม 2556****

ส่วนที่ 1 ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม

คำชี้แจง โปรดทำเครื่องหมาย ✓ ลงใน ❒ หน้าข้อความที่ตรงกับความเป็นจริงมากที่สุดเกี่ยวกับข้อมูลส่วนบุคคลของท่านหรือเติมคำตอบลงในช่องว่างที่ให้ไว้

1. เพศ ❒ ชาย ❒ หญิง

2. อายุ _____

3. ท่านจบการศึกษาขั้นสูงสุดในระดับ
   ❒ ปริญญาตรี ❒ ปริญญาโท ❒ ปริญญาเอก
   จากมหาวิทยาลัย _____

4. ท่านจบการศึกษาเภสัชศาสตรบัณฑิตจากมหาวิทยาลัยใด
   _____

5. ท่านมีประสบการณ์การปฏิบัติงานในโรงงานผลิตยารวมทั้งสิ้นเป็นเวลาเท่าใด
   _____

6. ตำแหน่งงานของท่านอยู่ในระดับใด
   ❒ ผู้จัดการ (Managerial level)
   ❒ หัวหน้างาน (Supervisory level)
   ❒ ปฏิบัติการ (Operational level)

7. ลักษณะงานที่ท่านปฏิบัติเป็นดังข้อใด (ตอบได้มากกว่า 1 ข้อ)
   ❒ ขึ้นทะเบียนยา
   ❒ การผลิตยา
   ❒ การประกันคุณภาพ หรือ ระบบคุณภาพ
   ❒ การวิเคราะห์หรือควบคุมคุณภาพยา
   ❒ การวิจัยและพัฒนาสูตรตำรับยา
   ❒ อื่นๆ โปรดระบุ _____

ส่วนที่ 2 ข้อมูลเกี่ยวกับกิจกรรมที่มีการใช้ภาษาอังกฤษในการปฏิบัติงาน

คำชี้แจง โปรดกาเครื่องหมาย ✓ ลงในช่องที่ตรงกับความเป็นจริงมากที่สุด โดยกำหนดให้

5 = มีความถี่ในการใช้ภาษาอังกฤษมากที่สุด

1 = มีความถี่ในการใช้ภาษาอังกฤษน้อยที่สุด

1. ในการปฏิบัติงาน ท่านใช้ภาษาอังกฤษในการปฏิบัติกิจกรรมต่อไปนี้มากน้อยเพียงใด

กิจกรรมที่มีการใช้ทักษะภาษาอังกฤษด้านการอ่าน	ความถี่ในการใช้ภาษาอังกฤษ				
	5	4	3	2	1
1) การอ่านจดหมายหรือจดหมายอิเล็กทรอนิคส์ (email) ในการติดต่อประสานงานผู้ร่วมงาน หัวหน้างาน ผู้บริหาร ลูกค้า ผู้จำหน่ายสินค้า (supplier) เจ้าหน้าที่รัฐ หรือ ผู้ตรวจสอบ (auditor)					
2) การอ่านรายงานการประชุม					
3) การอ่านเอกสารการฝึกอบรม					
4) การอ่านเอกสารมาตรฐานสำหรับวิธีการปฏิบัติงาน (เช่น SOP, WI เป็นต้น)					
5) การอ่านคู่มือการใช้งานของเครื่องจักรหรืออุปกรณ์การผลิตหรือวิเคราะห์คุณภาพยา					
6) การอ่านคู่มือการใช้งานโปรแกรมคอมพิวเตอร์ที่เกี่ยวข้องกับการผลิตหรือการวิเคราะห์คุณภาพยา เช่น SAP, ซอฟท์แวร์ควบคุม HPLC, GC, IR เป็นต้น					
7) การอ่านมาตรฐานและข้อบังคับทางกฎหมายที่เกี่ยวข้องกับโรงงานผลิตยา เช่น GMP, PIC/S Guideline, ISO 9001, HVAC validation, ACTD, ACTR เป็นต้น					
8) การอ่านตำรายาและเอกสารอ้างอิงด้านยา เช่น Codex, Pharmaceutical Excipients, USP, BP, Ph. Eur. , TP, JP เป็นต้น					
9) การอ่านแผนการปฏิบัติงาน (Protocol) และรายงาน (Report) ที่เกี่ยวข้องกับโรงงานผลิตยา เช่น validation master plan, cleaning validation, equipment qualification (IQ/OQ/PQ/DQ), product validation, stability study เป็นต้น					
10) อื่นๆ โปรดระบุ					

กิจกรรมที่มีการใช้ทักษะภาษาอังกฤษด้านการเขียน	ความถี่ในการใช้ภาษาอังกฤษ				
	5	4	3	2	1
1) การเขียนจดหมายหรือจดหมายอิเล็กทรอนิคส์ (email) ในการติดต่อประสานงานผู้ร่วมงาน หัวหน้างาน ผู้บริหาร ลูกค้า ผู้จำหน่ายสินค้า (supplier) เจ้าหน้าที่รัฐ หรือ ผู้ตรวจสอบ (auditor)					
2) การเขียนรายงานการประชุม					
3) การเขียนเอกสารมาตรฐานสำหรับวิธีการปฏิบัติงาน (เช่น SOP, WI เป็นต้น)					
4) การเขียนคู่มือการใช้งานของเครื่องจักรหรืออุปกรณ์การผลิตยาหรือวิเคราะห์คุณภาพยา					
5) การเขียนเอกสารนำเสนอความก้าวหน้าของงานหรือโครงการ					
6) การเขียนเอกสารประกอบการฝึกอบรม					
7) การเขียนเอกสารด้านการขึ้นทะเบียนยา					
8) การเขียนวิธีการวิเคราะห์ (Analytical Method) และข้อกำหนดของผลิตภัณฑ์ยา (Product Specifications)					
9) การเขียนแผนการปฏิบัติงานและรายงานที่เกี่ยวข้องกับโรงงานผลิตยา validation master plan, cleaning validation, equipment qualification (IQ/OQ/PQ/DQ), product validation, stability study, method validation เป็นต้น					
10) อื่นๆ โปรดระบุ					

กิจกรรมที่มีการใช้ทักษะภาษาอังกฤษด้านการฟัง	ความถี่ในการใช้ภาษาอังกฤษ				
	5	4	3	2	1
1) ฟังบทสนทนาขณะโต้ตอบกับผู้บังคับบัญชา หรือผู้บริหารที่เป็นชาวต่างชาติภายในองค์กร					
2) ฟังบทสนทนาขณะโต้ตอบกับผู้ร่วมงาน ลูกค้า ผู้จำหน่ายสินค้า (supplier) เจ้าหน้าที่รัฐ แขกของบริษัทหรือ ผู้ตรวจสอบ (auditor) ชาวต่างชาติแบบเผชิญหน้า					
3) ฟังบทสนทนาขณะโต้ตอบกับผู้ร่วมงาน ลูกค้า ผู้จำหน่ายสินค้า (supplier) เจ้าหน้าที่รัฐ แขกของบริษัทหรือ ผู้ตรวจสอบ (auditor) ชาวต่างชาติทางโทรศัพท์					
4) ฟังการอภิปรายและการสนทนาในการประชุม					
5) ฟังสัมมนา บรรยาย หรือการอบรมเชิงวิชาการ					
6) ฟังสรุปผลการตรวจสอบ (audit) จากลูกค้าหรือ ผู้ตรวจสอบ (auditor) ชาวต่างชาติ					
7) อื่นๆ โปรดระบุ					

กิจกรรมที่มีการใช้ทักษะภาษาอังกฤษด้านการพูด	ความถี่ในการใช้ภาษาอังกฤษ				
	5	4	3	2	1
1) พูดโต้ตอบกับผู้บังคับบัญชา หรือผู้บริหารที่เป็นชาวต่างชาติภายในองค์กร					
2) พูดโต้ตอบกับผู้ร่วมงาน ลูกค้า ผู้จำหน่ายสินค้า (supplier) เจ้าหน้าที่รัฐ แขกของบริษัทหรือ Auditor ชาวต่างชาติแบบเผชิญหน้า					
3) พูดโต้ตอบกับผู้ร่วมงาน ลูกค้า ผู้จำหน่ายสินค้า (supplier) เจ้าหน้าที่รัฐ แขกของบริษัท หรือ ผู้ตรวจสอบ (auditor) ชาวต่างชาติทางโทรศัพท์					
4) เจรจาต่อรองเกี่ยวกับเรื่องงานกับผู้ร่วมงาน ผู้บังคับบัญชา ผู้บริหาร ลูกค้า Supplier เจ้าหน้าที่รัฐ แขกของบริษัท หรือผู้ตรวจสอบ (auditor) ชาวต่างชาติ					
5) อภิปรายหรือสนทนาเกี่ยวกับเรื่องงานในที่ประชุม					
6) พูดอธิบาย หรือสาธิต ในการอบรม					
7) พูดนำเสนอรายงานประจำสัปดาห์ ประจำเดือน หรือประจำปี					
8) อื่นๆ โปรดระบุ					

ส่วนที่ 3 ข้อมูลเกี่ยวกับปัญหาและความถี่ของปัญหาในการใช้ภาษาอังกฤษที่พบในการปฏิบัติงาน
คำชี้แจง โปรดกาเครื่องหมาย ✓ ลงในช่องที่ตรงกับความเป็นจริงมากที่สุด

5 = ความถี่ที่พบปัญหาในการใช้ภาษาอังกฤษมากที่สุด
1 = ความถี่ที่พบปัญหาในการใช้ภาษาอังกฤษน้อยที่สุด

ในการปฏิบัติงาน ท่านพบปัญหาในการใช้ภาษาอังกฤษต่อไปนี้มากน้อยเพียงใด?

ปัญหาในการอ่าน	ความถี่ที่พบปัญหาในการใช้ภาษาอังกฤษ				
	5	4	3	2	1
1) ขาดความรู้เกี่ยวกับคำศัพท์ที่ใช้ทั่วไปในชีวิตประจำวัน					
2) ขาดความรู้เกี่ยวกับคำศัพท์เทคนิค หรือคำศัพท์เฉพาะ					
3) ขาดความรู้เกี่ยวกับคำสแลงและสำนวน					
4) ขาดความรู้ในเรื่องโครงสร้างของประโยคและไวยากรณ์					
5) ไม่สามารถที่จะจับใจความสำคัญของเรื่องที่อ่านได้					
6) ไม่สามารถที่จะเข้าใจในรายละเอียดของเรื่องที่อ่านได้					
7) ไม่สามารถเข้าใจในเรื่องที่อ่านได้เพราะขาดความรู้เกี่ยวกับเรื่องที่อ่าน					
8) มีเวลาจำกัดในการอ่านเอกสาร					
9) ปัญหาอื่นๆ ในการอ่าน (โปรดระบุ)					

ปัญหาในการเขียน	ความถี่ที่พบปัญหาในการใช้ภาษาอังกฤษ				
	5	4	3	2	1
1) ขาดความรู้เกี่ยวกับคำศัพท์ที่ใช้ทั่วไปในชีวิตประจำวัน					
2) ขาดความรู้เกี่ยวกับคำศัพท์เทคนิค หรือคำศัพท์เฉพาะ					
3) ขาดความรู้ในเรื่องโครงสร้างของประโยคและไวยากรณ์					
4) การเลือกใช้คำที่เหมาะสม					
5) ไม่สามารถลำดับความคิดได้					
6) ขาดความรู้ในเรื่องที่จะเขียน					
7) ไม่สามารถเชื่อมโยงข้อมูลหรือประโยคในย่อหน้าและระหว่างย่อหน้าได้อย่างเหมาะสม					
8) มีเวลาจำกัดในการเขียนเอกสาร					
9) ปัญหาอื่นๆ ในการเขียน (โปรดระบุ)					

ปัญหาในการฟัง	ความถี่ที่พบปัญหาในการใช้ภาษาอังกฤษ				
	5	4	3	2	1
1) ขาดความรู้เกี่ยวกับคำศัพท์ที่ใช้ทั่วไปในชีวิตประจำวัน					
2) ขาดความรู้เกี่ยวกับคำศัพท์เทคนิค หรือคำศัพท์เฉพาะ					
3) ไม่สามารถเข้าใจในสิ่งที่ได้ฟังเมื่อผู้พูดพูดเร็วเกินไป					
4) ไม่สามารถจับใจความสำคัญของเรื่องที่ฟังได้					
5) ไม่สามารถเข้าใจรายละเอียดของเรื่องที่ฟังได้					
6) ความไม่คุ้นเคยกับสำเนียงของชาวต่างชาติ เช่น ญี่ปุ่น เยอรมัน อินเดีย สิงคโปร์ จีน เป็นต้น					
7) การฟังข้อความที่ยาวเกินไป					
8) รู้สึกกังวลเมื่อฟังการสนทนากับชาวต่างชาติ					
9) ปัญหาอื่นๆ ในการฟัง (โปรดระบุ)					

ปัญหาในการพูด	ความถี่ที่พบปัญหาในการใช้ภาษาอังกฤษ				
	5	4	3	2	1
1) ขาดความรู้เกี่ยวกับคำศัพท์ที่ใช้ทั่วไปในชีวิตประจำวัน					
2) ขาดความรู้เกี่ยวกับคำศัพท์เทคนิค หรือคำศัพท์เฉพาะ					
3) การเลือกใช้คำที่เหมาะสม					
4) ไม่สามารถออกเสียงคำบางคำให้ถูกต้อง					
5) ไม่สามารถพูดให้เป็นประโยคที่สมบูรณ์หรือถูกต้องตามหลักไวยากรณ์					
6) ไม่สามารถแสดงความคิดเห็นหรือโต้ตอบบทสนทนาได้ภายในเวลาที่เหมาะสม					
7) มีความยากลำบากในการหาจังหวะแสดงความคิดเห็นหรือเข้าร่วมการสนทนาอย่างสุภาพและเหมาะสม					
8) รู้สึกกังวลหรือประหม่าเมื่อต้องพูดกับชาวต่างชาติ					
9) ปัญหาอื่นๆ ในการพูด (โปรดระบุ)					

ส่วนที่ 4 ข้อแนะนำในการแก้ปัญหาจากการใช้ภาษาอังกฤษในการปฏิบัติงาน
คำชี้แจง โปรดให้ข้อแนะนำในการแก้ไขปัญหาการใช้ภาษาอังกฤษในการปฏิบัติงาน

การแก้ไขปัญหาในการอ่าน

การแก้ไขปัญหาในการเขียน

การแก้ไขปัญหาในการฟัง

การแก้ไขปัญหาในการพูด

APPENDIX E
Questionnaire (English Version)

Questionnaire

English Use and Problems of Thai Industrial Pharmacists at Two Large Multinational Pharmaceutical Manufacturers in Thailand

This study is a part of the requirements for Master of Arts Degree in Business English for International Communication, Srinakharinwirot University. The objective of this questionnaire is to survey four skills and problems of language use of industrial pharmacists. Data will be valuable for developing ESP curriculums for pharmacists and resolving problems of English use in the pharmaceutical profession.

Your answers will be treated confidentially and presented as overall information only. Please help to complete every question in the questionnaire. Your cooperation is greatly appreciated.

This questionnaire is divided into 4 parts

Part I: General information of participants
Part II: English skill use in routine work of the industrial pharmacists
Part III: Problems of English use in routine work of the industrial pharmacists
Part IV: Suggestions about how to handle the problems of English use at the workplace

Thank you for your kind cooperation
Lagkhana Srisuwan

PLEASE RETURN THE QUESTONNAIRE BY 31 MAY 2013

Part I: General Information

Please mark ✓ into ❒ in front of the statements that are true about your information or fill in the blanks.

1. Gender ❒ Male ❒ Female

2. Age _____

3. What is your highest degree?

   ❒ Bachelor's Degree ❒ Master's Degree ❒ Doctoral Degree
   from_____

4. Which university did you receive the degree of pharmacy from?
   _____

5. How long have you been working in pharmaceutical manufacturing industry?
   _____

6. What level of position are you holding?
   - ❒ Managerial level
   - ❒ Supervisory level
   - ❒ Operational level

7. What kinds of job responsibilities do you have in your current position? (It is possible to make more than 1 choice)
   - ❒ Registration of pharmaceutical products
   - ❒ Production
   - ❒ Quality assurance or quality system
   - ❒ Quality control
   - ❒ Production Development
   - ❒ Others (Please specify: .....)

Part 2 Opinions about the use of English skills

Please mark ✓ in boxes that most reflect your answer.

Remarks:

5 = Most frequent

1 = Least frequent

2. In your routine work, how frequently do you use English skills to perform the following activities?

Communicative tasks to be performed using English reading skill	Frequency of English use				
	5	4	3	2	1
1) Reading letters or emails from colleagues, customers, suppliers or auditors					
2) Reading minutes of meetings					
3) Reading training materials					
4) Reading standard operating procedures (SOP) or work instructions (WI)					
5) Reading manuals of production machines or laboratory equipment					
6) Reading manuals of software regarding production or QC laboratory equipment (e.g. SAP, HPLC, GC, and IR operating software)					
7) Reading guidelines and references on laws and regulations of pharmaceutical manufacturing and product registration (e.g. GMP, PIC/S Guideline, ISO 9001, GAMP, HVAC validation, ACTD, and ACTR)					
8) Reading pharmacopoeias and text books regarding pharmaceutical science and technology (e.g. Codex, Handbook of Pharmaceutical Excipients, USP, BP, EP, TP, and JP)					
9) Reading protocols and reports concerning quality assurance and validations (e.g. validation master plans, cleaning validation, equipment qualification (IQ/OQ/PQ/DQ), and product validation)					
10) Others, please specify:					

Communicative tasks to be performed using English writing skill	Frequency of English use				
	5	4	3	2	1
1) Composing letters or emails to Thai colleagues, customers, suppliers or auditors					
2) Writing minutes of meetings					
3) Establishing standard operating procedures (SOP) or work instructions (WI)					
4) Writing manuals of production machines or laboratory equipment					
5) Writing presentations for progress or project reports					
6) Writing training materials					
7) Writing dossiers regarding product registration					
8) Writing analytical methods, and product specifications					
9) Writing protocols and reports regarding pharmaceutical manufacturers (e.g. validation master plan, cleaning validation, equipment qualification (IQ/OQ/PQ/DQ), product validation, stability study, analytical method validation, and audit reports)					
10) Others, please specify:					

Communicative tasks to be performed using English listening skill	Frequency of English use				
	5	4	3	2	1
1) Listening to managers during discussions					
2) Listening to non-Thai speaking colleagues, customers, suppliers, or auditors in face-to-face discussions					
3) Listening to non-Thai speaking colleagues, customers, suppliers, or auditors during discussions by phone or teleconference					
4) Listening in internal meetings					
5) Listening in seminars, conferences or training courses regarding pharmaceutical knowledge and technology					
6) Listening in audit wrap-up meetings					
7) Others, please specify:					

Communicative tasks to be performed using English speaking skill	Frequency of English use				
	5	4	3	2	1
1) Discussing work-related matters with non-Thai speaking managers					
2) Face-to-face discussions with non-Thai speaking colleagues, customers, visitors, suppliers or auditors					
3) Negotiating with non-Thai speaking colleagues, customers, visitors, suppliers or auditors					
4) Discussing with non-Thai speaking colleagues, customers, visitors, suppliers or auditors by phone or teleconference					
5) Discussing work-related matters in internal meetings					
6) Instructing, explaining, or demonstrating in seminars or training courses					
7) Presenting work progress in a weekly, monthly, or yearly meetings					
8) Others, please specify:					

Part 3 Problems of English use in your professional career.
Directions: Please mark ✓ in the box that most reflects your answer.

Remarks:

5 = Most frequent
1 = Least frequent

How often do you have problems when using English to perform your routine tasks?

Reading problems	Frequency of Problems				
	5	4	3	2	1
1) Lacking knowledge of general vocabulary					
2) Lacking knowledge of technical terminology					
3) Lacking knowledge of idioms and slang					
4) Lacking knowledge of sentences and grammatical structures					
5) Inability to get the main ideas					
6) Inability to understand details					
7) Lacking knowledge of subject matters					
8) Having time constraints to complete reading tasks					
9) Other ……..					

Writing problems	Frequency of Problems				
	5	4	3	2	1
1) Lacking knowledge of general vocabulary					
2) Lacking knowledge of technical terminology					
3) Lacking knowledge of idioms and slang					
4) Making choices of words					
5) Difficult to appropriately organize ideas in writing					
6) Lacking knowledge of subject matters					
7) Linking and organizing paragraph					
8) Having time constraints to complete writing tasks					
9) Others ……..					

Listening problems	Frequency of Problems				
	5	4	3	2	1
1) Lacking knowledge of general vocabulary					
2) Lacking knowledge of technical terminology					
3) Understanding rapid speech					
4) Getting main ideas of spoken messages					
5) Understanding details of spoken messages					
6) Understanding unfamiliar accents e.g., Japanese, German, Indian or Singaporean English speakers.					
7) Understanding long speech					
8) Being anxious when having conversations with foreigners					
9) Others ……..					

Speaking problems	Frequency of Problems				
	5	4	3	2	1
1) Lacking knowledge of general vocabulary					
2) Lacking knowledge of technical terminology					
3) Making word choices					
4) Producing complete and grammatically correct sentences					
5) Pronouncing words properly					
6) Being anxious in conversations with foreigners					
7) Responding at a proper time during conversations					
8) Entering discussion politely and properly					
9) Others ……..					

Part 4: Suggestions for handling problems of English use
Directions: Please give suggestions to solve the problems of English use at your workplace.

Suggestions for solving reading problems

Suggestions for solving writing problems

Suggestions for solving listening problems

Suggestions for solving speaking problems

VITAE

VITAE

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