

**PROFESSIONAL NEEDS AND CHALLENGES FOR
THE DEVELOPMENT OF ENGLISH LANGUAGE PROFICIENCY AT
A RESEARCH INSTITUTE IN PATHUM THANI:
A SITUATIONAL ANALYSIS**

MARIYA SANKEAW

**A THESIS SUBMITTED IN PARTIAL FULLFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS
PROGRAM IN ENGLISH FOR CAREER DEVELOPMENT
FACULTY OF LIBERAL ARTS
RAJAMANGALA UNIVERSITY OF TECHNOLOGY THANYABURI
ACADEMIC YEAR 2024
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Thesis Title	Professional Needs and Challenges for the Development of English Language Proficiency at a Research Institute in Pathum Thani : A Situational Analysis
Name – Surname	Miss Mariya Sankeaw
Program	English for Career Development
Thesis Advisor	Miss Thanyapatra Soisuwan, Ed.D.
Academic Year	2024

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ABSTRACT

The aims of this study were to: 1) analyzed the situations, 2) identify the professional needs for the English language used at the workplace and 3) design activities to meet challenges.

The participants of this study comprised 80 researchers working at a research institute in Pathum Thani. The questionnaire data were about the challenges and professional needs in English language used at workplace. The data analysis performed in Microsoft Excel included calculating frequencies, percentages, means, and standard deviations. The findings derived from interviews were analyzed using the Three Cs Analysis Technique by Litchman (2013).

The results revealed that all four skills were perceived as moderate level of challenges. In terms of professional needs, the researchers had high needs for listening and reading skills. Meanwhile, the data obtained from the interviews suggested that all skills were deemed essential for professional work. The study also identified opinion toward needs of Academic English language training course. The result indicated a preference for training focusing on speaking (45.07 %) and writing skills (43.67%). The data from TISTR directors during interviews regarding the training and professional development of researchers suggested that a comprehensive training course should encompass all four language skills. Furthermore, the results of this study offered valuable guidance to designing English language courses for researchers to enhance researchers' professional skills through improved English competence.

Keywords: challenges, professional needs, situational analysis

Acknowledgements

To God be the glory. The successful completion of this academic journey was made possible through the invaluable support of individuals who contributed significantly to the attainment of my degree. I wish to extend my profound gratitude to them for entrusting me with the responsibility of completing this project.

I extend my heartfelt thanks to my advisor, an exceptionally kind and supportive professor. Her extensive advice and feedback have been immensely valuable in shaping the research thesis. Her professional guidance, unwavering motivation, and empathetic approach have made this thesis possible.

I would like to express my appreciation to my thesis examiners, Assistant Professor Dr. Anchalee Chayanuvat, Assistant Professor Dr. Tawatchai Chaisiri, and Assistant Professor Dr. Thitapa Sinturat, who provided me with precious comment and suggestions on this thesis.

I would also like to thank all the participants from Thailand Institute of Scientific and Technological Research for dedicating their time to complete the questionnaires and for granting me the honor of interviewing them. Without them, this research study would not have been completed.

Most importantly, I would like to express my gratitude to my family, classmates, colleagues, Dr. Anan Piriya-phattarakit, and all my friends, as well as the people at the church who prayed for the success of my master's degree studies. I appreciate the support and encouragement from every one of you.

Mariya Sankeaw

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CHAPTER 1

INTRODUCTION

This chapter presents the introduction to the study composed of seven sections. It consists of Background and Statement of the Problem, Purposes of the Study, Research questions, Definition of Terms, Significance of the Study, Limitations of the Study, and Conceptual Framework.

1.1 Background and Statement of the Problem

Presently, English stands as a globally recognized language, operating as a universal medium of communication. Its role extends beyond international borders, with several nations designating it as their official language. In light of its widespread use, English plays a pivotal role in fostering intercultural exchange, facilitating the sharing of ideas, and nurturing positive cross-border relations among people from diverse nations (Akther, 2022; Chamnaktan, 2022; Otnagam, 2022; Vachanaratna, 2022). As indicated by the Statista Research Department (2020), English has been the primary language for approximately 1.27 billion individuals globally, encompassing both native and non-native speakers, constituting roughly 16 percent of the world's populace. Furthermore, English has gained the status of a global language, being utilized on a worldwide scale. It serves not only as a means of communication but has also assumed the role of the predominant language in various domains, including entertainment, education, business, politics, and international relations (Chamnaktan, 2022).

As mentioned above, English is the most widely used language on the globe. Sugarin (2020) stated that English is an international language used globally and not only for communication but also plays a significant role in creating academic and professional opportunities. A lack of proficiency in English communication is considered one of the obstacles to success. English, acknowledged as the most prevalent global language, is applied not solely for information exchange but also extensively in the realms of education, commerce, and various professions (Otnagam, 2022). Having good proficiency levels in English is a key requirement to succeed as a specialist in any occupation or field of knowledge (Hutchinson and Waters, 1987). The ASEAN Economic Community

(AEC) started in 2015 and opened the competition for employment in certain fields of work. Thailand joined the Asian Economic Community (AEC) in 2015, English has grown increasingly essential because of the founding of the Association of Southeast Asian Nations (ASEAN), which elevated it into the global and regional community (Supamit, 2012). ASEAN consists of 10 member countries including Thailand, Singapore, Malaysia, the Philippines, Indonesia, Vietnam, Brunei Darussalam, Laos, Myanmar, and Cambodia, and is a regional organization with the primary goals of advancing economic growth, social progress, and cultural development among its member nations. It also fosters cooperation and assistance in various fields such as economics, culture, education, and administration to support peace and regional stability in Southeast Asia. Specifically in the domain of education, ASEAN strives to enhance collaboration and mutual support in research and training endeavors (ASEAN Secretariat, 2020). Likewise, Fauzanna (2023) mentioned that English serves as the common language of communication within ASEAN and is an integral component of the ASEAN identity. Furthermore, as the working language within the ASEAN Economic Community (AEC), English has gained greater prominence. The growing integration of new technologies and the surge in internet usage in various sectors like business, education, science, and everyday life have created a substantial need for English proficiency. Recognizing English's pivotal role within the AEC, there is a strong imperative to improve the English skills of the Thai population, facilitating their pursuit of social, economic, and educational objectives across international borders (Lekpetch and Foley 2022). Therefore, those who are proficient in English are more likely to success than those who are not.

English proficiency is crucial for employees interested in advancing their careers. Those with excellent English skills may be offered high salaries by various firms. According to Akther (2022), the current job market emphasizes the ability to communicate effectively in English; therefore, job seekers must focus on improving these skills to increase their chances of success. Nesaratnam et al. (2020) assert that in the twenty-first century's globalized economy, employers place a high value on graduates' fluency and ability to communicate effectively in workplace English. For this reason, the researcher recognizes the importance of English in the workplace, especially for people

employed by organizations that interact with foreigners or those who need to improve their use of English in their careers.

Thailand Institute of Scientific and Technological Research (TISTR) is a non-profit organization that carries out research and development in science, technology, and innovation for the purpose of adding value to goods and services, expanding national competitiveness, and transferring technology and innovation to business and community enterprises, with a focus on growing economic, social, and environmental utilization. There are departments under TISTR which conduct research and development work as follows: Research and Development Group for Bio- Industries and Research and Development Group for Sustainable Development, R&D Group for Bio- Industries is responsible for conducting integrated R&D in order to fulfill the needs of Thailand's bio-industries of the country. The group comprises four centers and one research station as the following; Expert Centre of Innovative Agriculture, Expert Centre of Innovative Health Food, Expert Centre of Innovative Herbal Products, Biodiversity Research Centre, and Lamtakong Research Station. R&D Group for Sustainable Development is responsible for conducting integrated R&D projects following the National policies on sustainable development. The group comprises three centers and one research station as following: Expert Centre of Innovative Clean Energy and Environment, Expert Centre of Innovative Materials, Expert Centre of Innovative Industrial Robotics and Automation, and Sakaerat Environmental Research Station. Researchers working in both R&D groups have to conduct scientific research, so they have to read research papers in English both domestically and internationally. They need to write research papers and articles, and they have to employ English, especially in the abstract. It is occasionally required to create a research paper in order to apply for funding from abroad. For this reason, researchers must do their research in English. TISTR comprises three categories of researchers, each with distinct responsibilities. Senior researchers lead research projects. Principal investigators conceptualize, design, and oversee research studies; they manage research teams, secure funding, and communicate results. Researchers conduct experiments, analyze data, publish findings, secure research funding, and collaborate with colleagues. Research assistants support senior researchers and researchers by performing various tasks, including data collection, literature reviews, experimental setups, and

administrative duties. In addition, English plays a crucial role in promotion for three types of researchers at TISTR, as passing an English language test is a requirement for advancement.

The researcher works as a research assistant at the Expert Centre of Innovative Agriculture and has encountered language barriers in the English proficiency required for specific tasks. This study aims to identify challenges in developing English proficiency within this profession and to investigate the professional English language needs of researchers. The findings will provide guidelines for TISTR to improve English courses tailored for researchers.

Statement of the Problem

The R&D Group for Bio-Industries and the R&D Group for Sustainable Development are responsible for conducting scientific research. They must read research papers from both national and international sources, especially in English, for academic purposes and to reference in their work. Inevitably, researchers also need to write for academic purposes, such as articles, research papers, or abstracts in English. Additionally, researchers are required to submit research papers to apply for funding. Consequently, those proficient in English have the opportunity to seek research funding from international sources. One of the main obstacles, and the focus of this study, is the challenge researchers face in academic writing in English. Furthermore, researchers must meet the institution's English language proficiency standards to qualify for promotions. Those who do not meet these criteria are ineligible for advancement to higher positions. Therefore, English proficiency among researchers is essential not only for fulfilling job responsibilities but also for career progression.

For this reason, it is essential to understand the challenges researchers face when using English in their profession and to identify their specific language needs. Present Situation Analysis (PSA) is one approach to addressing these needs. Defined by Duddley-Evans and John (2009), PSA is an instrument used to assess learners' current competence across various skills and language uses. Analyzing English usage in the workplace and identifying researchers' professional needs can enhance understanding of these issues and

offer effective solutions. It can also highlight gaps in the academic preparation programs available to the researchers at TISTR.

1.2 Purposes of the Study

1.2.1 To analyze the situations in the English language used at the workplace of the researchers in TISTR

1.2.2 To identify the professional needs in English language used at the workplace for the researchers in TISTR

1.2.3 To design guidelines for professional development of English language used at the workplace for the researchers in TISTR

1.3 Research Questions

1.3.1 What are the situations in the English language used for researchers in using English at the workplace?

1.3.2 What are the professional needs in English language used at workplace for researchers in TISTR?

1.3.3 What are the guidelines for professional development of English language used at workplace for researchers in TISTR?

1.4 Conceptual Framework

This research is based on the conceptual framework specified below:

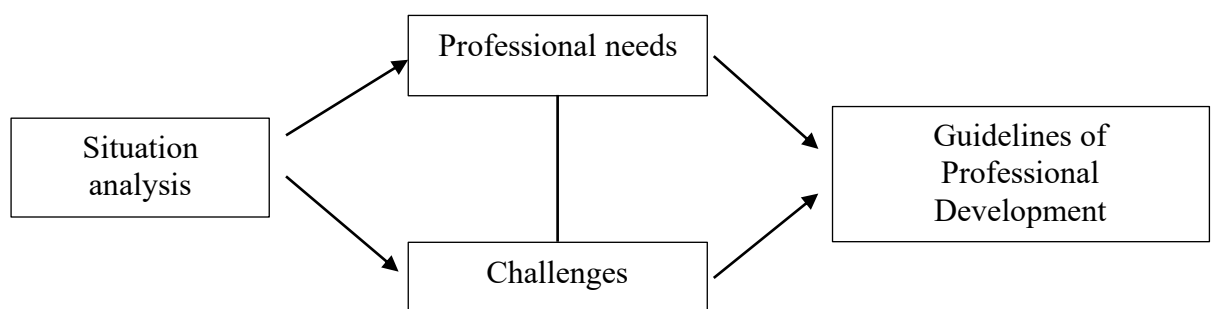


Figure 1. Conceptual Framework

Figure 1 illustrates a process of analyzing the current situation and needs, identifying challenges, and developing guidelines to support the professional English language skills and language proficiency of researchers.

1.5 Significance of the Study

The primary goal of this study is to gain a deeper understanding of the challenges TISTR researchers face with their English language skills in the workplace. Additionally, it aims to identify specific professional needs related to enhancing their English proficiency. Ultimately, the results of this study can serve as a foundation for designing targeted English language courses that address researchers' specific needs and strengthen their professional skills through improved English competence.

1.6 Limitations of the Study

This case study aims to analyze the situations and identify the professional English language needs of the researchers at a research institute in Pathum Thani. The sample includes only a portion of the researchers, so the findings may not fully represent the entire organization. While the results may be limited to certain academic fields and may not apply universally, they offer useful insights for researchers and scholars pursuing similar work.

1.7 Definition of Terms

TISTR refers to Thailand Institute of Scientific and Technological Research which is a government sector under the Ministry of Higher Education, Science, Research and Innovation (MHESI)

Professional needs refers to the needs for the researchers to develop English proficiency in the profession, for example reading for academic papers, writing articles, research papers, or abstracts in English.

Challenges refers to the obstacles when using English proficiency by the researchers in their work.

Researchers in this study refer to senior researchers, researchers, and research assistants who work in the TISTR in the 4 centers of the Bio-Industries Group and who work in academic field with positions as follows: Senior researcher, Researcher and Research Assistants.

Needs Analysis refers to the process of gathering information from researchers at TISTR and creating appropriate course curricula.

Present Situation Analysis refers to a method for assessing researchers' current level of competency in various types of English skills and language usage.

CHAPTER 2

REVIEW OF RELATED LITERATURE

This chapter examined the theories and literature relevant to Professional Needs and Challenges for the Development of English language Proficiency at a Research Institute Pathum Thani: A Situational Analysis. The content discussed encompasses the following subjects. Needs analysis, English for specific purposes, Challenges to development of English skills, and related studies.

2.1 Needs Analysis

2.1.1 Definitions of Needs analysis

Needs analysis is a highly valuable tool for educational systems to identify the requirements of learners and develop suitable course curricula. It is crucial to understand the types of needs before initiating the analysis process (Eamjoy, 2015). Needs analysis can be defined in many aspects as Lawrence and Springer (1991) proposed that need analysis is a valuable tool for identifying learners' requirements and recognizing their difficulties in using language. Brown (1995) also defined needs analysis as the procedure for gathering and studying crucial information to enable the development of a curriculum that satisfies the demands of the learners. According to Nunan (1988) needs analysis is a set of tools, techniques, and procedures for defining language content and learning processes. It related to the methodical gathering of specific data about language needs in order to fulfill a specific group's learning requirements. Moreover, needs analysis is an essential part of every workplace training as Williamson (1993) stated that inadequate motivation may be the cause of poor performance. According to Boshier and Smalkoski (2002), a theory called needs analysis is employed to address the discrepancy or shortfall in students' current abilities compared to their desired skills. It revolved around understanding the requirements of the target situation and employing these insights to craft an appropriate curriculum. Additionally, Mackay and Mountford (1978) suggested that individuals learning English in conjunction with academic or professional expertise often have a clearer understanding of their English language utilization goals in order to determine the nature of learners' requirements. Dornyei (2001) suggested that in order to align the curriculum and instructional materials with the student's preferences, it is

advisable to employ needs analysis methods to gain insights into your students' requirements, objectives, and areas of interest, and then incorporate these aspects into your curriculum to the greatest extent feasible.

2.1.2 Approaches to Needs Analysis

The needs analysis approach appears to be a fundamental procedure for collecting information regarding students' requirements, particularly their language needs. Many ESP researchers advocate that the core elements for assessing learners' language needs encompass Target Situation Analysis (TSA) and Present Situation Analysis (PSA). According to Rahman et al. (2009), the theoretical foundation of needs analysis is rooted in the components of target-situation analysis and present-situation analysis. For Jordan (1997) a comprehensive needs analysis comprises multiple methods, including target-situation analysis, present-situation analysis, deficiency analysis, strategy analysis, and means analysis. Numerous studies have provided important insights on the necessity of a systematic needs analysis to determine the target needs of ESP learners and their Present Situation Analysis, which is necessary in order to produce, modify, or select the most effective teaching materials (Moattarian & Tahririan, 2014; Yundayani, 2018; Noor, 2019).

Despite the fact that there are many different demands, they can generally be divided into two basic categories: Target Situation Analysis and Present Situation Analysis, which will be covered in the following sections.

2.1.3 Target Situation Analysis (TSA)

In 1980, Chambers introduced the concept of Target Situation Analysis (TSA) for the first time in an article. Chambers aimed to provide clarity on this terminology, explaining that Target Situation Analysis refers to “communication within the specific intended context” (Eamjoy, 2015). In accordance with Jordan (1997), Target Situation Analysis pertains to the examination of students' requisites upon concluding a language course, with a particular emphasis on their performance at the target level. Hutchinson and Waters (1987) highlight that target needs encompass what learners need to effectively function in a particular context. The learners' intended context initially includes language

requirements specific to their purposes, communication needs, as well as the language skills and functions necessary for identified educational or professional objectives.

According to Hutchinson and Waters (1987), the target situation provides a framework for guidance, similar to a compass pointing in the direction of the goal. However, teachers are extremely important in choosing methods and resources that can successfully maintain learners' motivation. In a similar context, Nunan (1988) emphasizes that the choice of content for a specific situation should be given greater importance than the method employed to deliver the course. Hutchinson and Waters (1987) propose an analysis of the target situation, considering factors related to learners' necessities, lacks, and wants. "Necessities" represent the type of needs that delineate what learners must acquire and proficiently apply within the target context. "Lack" represents the difference between the required proficiency level and the learners' existing knowledge and abilities. Lastly, "want" represents a significant motivator in the learning process, indicating the skills or activities learners aspire to access within the target situation. In Hutchinson and Waters' (1987) theory, learners' "want" closely aligns with the subjective needs outlined in Brindley's (1984) and Nunan's (1988) theories. It encompasses the psychological desires for learning initiated by the learners themselves. Despite varying levels of detail in scholars' descriptions of target situation analysis, there is a consensus that specifying the learners' target situation is the initial step. Subsequently, an investigation into the factors comprising learners' necessities, lacks, and wants in language learning is conducted.

To effectively analyze the language needs within a target situation, it is imperative to inquire about the specifics of that situation and the participants' perspectives regarding various scenarios. Hutchinson and Waters (1987) provide a structured target situation analysis framework designed to facilitate the collection of relevant information. This framework consists of six essential questions, which are as follows:

(1) Why is the language needed? It may be essential for educational, professional, training, or combined purposes, or even for other specific objectives.

(2) How will the language be used? It could serve as a means of communication through speaking, reading, writing, etc. Additionally, it may be employed across various

communication channels, such as face-to-face or telephone interactions, and take various forms of discourse, including lectures, academic texts, and informal conversations.

(3) What will the content areas be? The content areas can be classified into subjects or levels of language study.

(4) Who will the learners use the language with? These interactions might involve native or non-native speakers. Furthermore, other factors such as the recipient's level of knowledge and the nature of the interlocutor's relationship must be taken into account.

(5) Where will the language be used? Language usage can occur in diverse settings, encompassing both human and linguistic contexts.

(6) When will the language be used? It might find application within ESP courses or in various alternative situations.

In line with this approach, when identifying the target situation, it becomes crucial to analyze the learners' necessities, lack, and want since this information significantly informs the design of ESP courses.

2.1.4 Present Situation Analysis (PSA)

Present Situation Analysis is an approach used to assess the current state of learners' language proficiency at the beginning of a language course. This analysis helps instructors understand the learners' existing language skills, knowledge, and capabilities, which is essential for providing the course to meet their specific needs and starting points. The original theory of Present Situation Analysis is attributed to Richterich and Chancerel (1987, as cited in Ritman, 2016). They introduced this concept as a means to evaluate learners' language proficiency levels as they enter a language course. The analysis draws upon information from various sources, including the learners themselves, the educational institution, and the user institution (Jordan, 1997). According to Gusti (1991, as cited in Yundayani, 2018), Present Situation Analysis aims to evaluate the current state of learning and teaching within an educational institution. This evaluation should encompass various aspects, including the skill levels of the learners, the teaching abilities of the faculty, the content being taught, the syllabus for English for Specific Purposes (ESP), and the historical performance data of the institution. Duddley-Evans and John (2009)

also consider Present Situation Analysis as a tool for measuring the current proficiency of learners in different language skills and language usage. It is regarded as a crucial process for evaluating learners' capacity to use the target language effectively at their present skill level. Present Situation Analysis is characterized as a comprehensive approach that encompasses identifying the current deficiencies in learners' language skills and sub-skills. It can be understood as the process of identifying the areas where students lack, bridging the gap between what is necessary and what students already know in relation to the subject, as well as their current skills and performance (Yundayani, 2018). The majority of these theories place significant emphasis on aspects such as learners' motivation, attitudes, and learning preferences, with the exception being Munby's theory in 1978. According to Robinson (1980) understanding learners' needs is closely connected to their prior experiences and their proficiency levels, which in turn are linked to their motivation for learning. Learners are prompted to evaluate whether the content of the course aligns with their specific goals, previous experiences, and personal aspirations. Furthermore, Hutchinson and Waters (1987) describe Present Situation Analysis as a means to address learning needs. Learning needs encompass how learners can effectively manage their learning processes, making them a critical aspect of the classroom environment. These learning needs encompass learners' motivation, inspiration, knowledge, experiences, and skills. They are indispensable and play a vital role in assisting teachers in determining the content that engages and motivates learners during lessons. The target situation serves as a navigational guide directing us towards our destination. On the other hand, learning needs can be seen as the vehicles that navigate us along this path, propelled by learners' motivation to reach their goals. Consequently, relying on the findings from the target or present situation analyses is insufficient when it comes to course design. Target situation analysis is concerned with the language used in a specific context, while present situation analysis centers on language learning, encompassing how learners acquire language and their interactions with the target language. Recognizing learners' needs takes paramount importance in the instructional process, necessitating an approach that focuses on the learners in the needs analysis process (Hutchinson & Waters, 1987; Robinson, 1980).

Based on the attributes of the present situation, specifically learning needs, Hutchinson and Waters (1987) propose a framework for conducting a learning needs analysis. This framework comprises a series of questions as the following:

(1) Why are the learners taking this course? Enrollment might be driven by curriculum requirements or personal choice as an elective.

(2) How do the learners learn? This aspect delves into the learners' educational background, their perspectives on teaching and learning, and the teaching methodologies that resonate with them.

(3) What resources are available? These encompass professors, course content, academic materials, and extracurricular activities.

(4) Who are the learners? Analysis entails exploring their demographic characteristics such as age, gender, nationality, prior knowledge, interests, socio-cultural backgrounds, and attitudes.

(5) Where will the ESP course take place? Considerations include the physical environment, ambiance, and surroundings of the classroom setting.

(6) When will the ESP course take place? This encompasses the timing of class sessions, duration of each class, and the frequency of classes per week.

Furthermore, in the process of gathering data from the present situation analysis, various methods come into play, such as the utilization of survey questionnaires and conducting interviews, as highlighted by Jordan (1997). Hence, course designers must seek information from both Target Situation Analysis and Present Situation Analysis, as these two approaches are regarded as valuable tools in needs analysis development.

2.1.5 Professional Needs

“Professional needs” refers to the differences or gaps between the actual, virtual, or expected conditions. This gap needs to be filled for the benefit of the individuals or the workplace. The difference between the expected and actual conditions can be used to determine the gap (Soisuwan et al., 2019).

This research aims to examine the professional needs in English language used at the workplace to know the specific language skills and competencies that the researcher

requires in a professional or workplace context where English is the primary or secondary language of communication. So, professional needs in this study are the demand of the specific language used at the workplace. According to Utaiwan (2019), it is a crucial element in helping office workers in understanding other people and collaborating effectively and efficiently. The knowledge and abilities of a specific person or group can be improved to assist them in performing their jobs more effectively by being aware of the professional demands of employees in their line of work (Makmulma, 2019).

In conclusion, the current study aims to analyze the situations and to identify the professional needs in the English language used in the workplace of researchers in TISTR. This study is based on Hutchinson and Waters' (1987) needs analysis approach as a theoretical framework that covers Target Situation Analysis and Present Situation Analysis; the proper approaches to meet challenges of English language used at workplace for researchers in TISTR.

2.2 English for Specific Purposes

English for Specific Purposes (ESP) is created to address specific learner needs relating to the subject matter in particular fields and places a priority on language appropriate to grammar, lexis, discourse, and semantics analysis of the discourse that ESP is the opposite of general English (Sookhom, 2018). According to Munby (1978), ESP curriculum and learning materials are developed based on a thorough analysis of the communication requirements of the learners in advance. Hutchinson and Waters (1987) explained that Traditional English attempted to explain the grammar—the principles on which English should be used. However, the approach of teaching English has altered to emphasize which the language is actually utilized for in conversation and in real circumstances. According to Master (2005, as cited in Sookhom, 2018) ESP emphasizes the importance of components in situations that learners may encounter in real language.

2.2.1 Definition of ESP

Several scholars have given ESP various definitions. Hutchinson and Waters (1987), defines ESP as a type of language instruction that emphasizes linguistic features utilized in particular fields along with learner-centered methods in which the motivations

of learners are considered a significant component that influences all decisions regarding the teaching of languages and the subjects taught in courses. An extra definition of ESP from Robinson (1980) is the focus on the distinctive or specific aim, not the language. Furthermore, Richards, Platt and Platt (1992) defined that ESP was once considered to be an English language course or program of instruction where the objectives and content of the course were determined by the unique requirements of a specific group of learners.

In addition, Dudley-Evans and St. John (1998) also provided a definition of ESP and clarification of the expression by describing its characteristics and grouping them into two categories:

Absolute characteristics of ESP

- ESP is created to deal with specific needs of the learner;
- ESP uses the underlying processes and practices of the disciplines it supports;
- ESP is a special focus on the language (e.g., grammar, lexis, register), discourse, and genres that are appropriate for learning tasks or activities.

Variable characteristics of ESP

- ESP may be integrated or created for particular fields;
- ESP may employ a different way of instruction than general English in certain instructional circumstances;
- ESP is probably intended for adult learners, either in a professional job context or at an educational level. However, it can be appropriate for students in secondary schools;
- ESP is often designed for learners at the intermediate or advanced level. However, it can be utilized with beginners as most ESP courses presume a basic understanding of the language system.

Additionally, Bhatia (2017) explains that ESP not only satisfies learners' needs for linguistic contexts and practices, but it also fills the gap between professional and classroom discourses. Also, defined by Orr (2012) ESP is a teaching strategy that emphasizes communicative skills and explicit language knowledge. This approach is required to achieve special goals within a particular discipline or profession.

To summarize, ESP, for the purposes of this study, indicates the particular English utilizing for specialized professions. It refers to the idea that the objective of an ESP course is to prepare learners to function adequately in particular situations, which implies that learners will utilize the target language in their future jobs.

2.2.2 ESP related to Needs Analysis

Regarding Needs Analysis and English for Specific Purposes (ESP), Mackay and Mountford (1978) contend that learners necessitate English either as a tool for their specialized education or as a medium for fulfilling future social or specific occupational roles. Hence, conducting an analysis is crucial for identifying the precise requirements of a specific group of learners, enabling the development of a course design and materials that are best suited to their needs. Furthermore, the analysis of the particular learner group's specific requirements marks the initial phase in designing an ESP course, as it shapes the course's characteristics (Jiajing, 2007). According to Dudley-Evans and St John (1998), certain distinctive needs of particular students reflect the needs they have for their language-learning experience. In order to create and construct the ESP course, needs analysis entails obtaining information about the learners' personal, academic or professional, cultural, and linguistic backgrounds.

In ESP contexts, there is another critical concept to take into account, which is needs analysis. Rahman et al. (2009) emphasize that needs analysis is the central element of ESP, serving as the foundation for creating a focused course (Dudley-Evans and St. John, 1998 and Jordan, 1997). It is evident that ESP cannot be dissociated from the learners' requirements because the needs analysis stands as the pivotal stage in ESP course and syllabus development, material selection, teaching and learning, and course assessment (Dudley-Evans & John, 1998). Hutchinson and Waters (1987) assert that the foundation of the ESP approach should rest upon identifying the specific requirements of learners within their specialized fields. ESP instruction should follow the principles of effective language learning and teaching, much like language courses for general purposes. While all language courses are constructed around learners' needs, ESP sets itself apart from General English through its deliberate consideration of these needs.

When learners and educators have a clear understanding of why they need to engage with English, this awareness significantly shapes the content of the language course.

In conclusion, the needs analysis is relevant to the ESP course since it forms the foundation for training programs and assists in their development. It serves as ESP's cornerstone and guides students onto a narrow path. In order to successfully prepare and develop the courses, it is crucial to understand the demands of the students.

2.2.3 Types of ESP

Hutchinson and Waters (1987) limit the scope of ESP courses by taking into account the specific circumstances of the learners. Dudley-Evans and John (1998) stress that ESP was originally split into two main categories: English for Academic Purposes (EAP) and English for Occupational Purposes (EOP). Similarly to Mackay and Mountford (1978), ESP is categorized based on professional domains, which are further divided into EAP (English for Academic Purposes) and EOP (English for Occupational Purposes). They have developed a form of ESP that categorizes EAP and EOP according to the field or profession (see Figure 2).

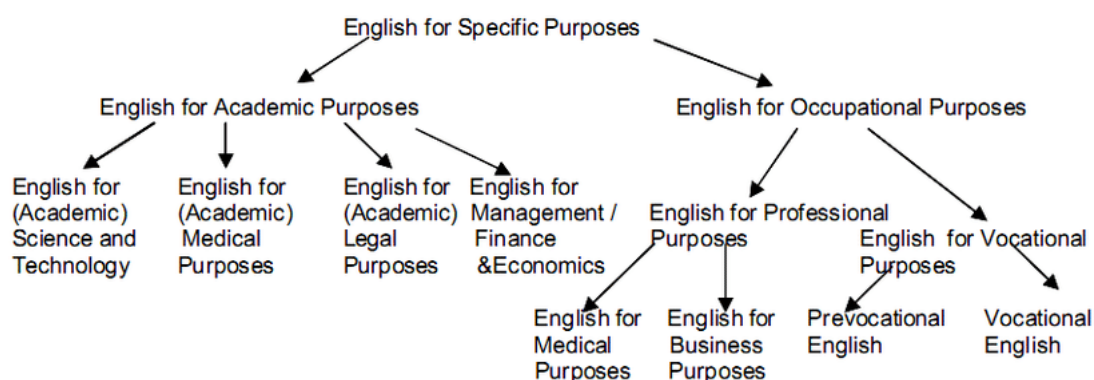


Figure 2. Classification of ESP (Dudley-Evans and St. John, 1998)

The primary focus English for Academic Purposes (EAP) is on English for Science and Technology (EST). However, it is worth noting that other areas within EAP, such as the academic study of finance, economics, banking, business, and accounting, have been gaining significance. EAP is a subset of ESP that focuses on college students

who are learning the language for particular goals. It involves instructing students regarding how to use language properly for academic reasons. English for Occupation Purposes (EOP) courses combine with pre-experience for English curricula created to get learners ready for the workforce. EOP pertains to English usage that serves non-academic functions. This category encompasses English for various professions, including Law, Medicine, Business and Administration, as well as Vocational Purposes within workplace contexts. It is crucial to differentiate between the language and discourse used for academic purposes and those employed for occupational purposes. For instance, this distinction is vital when developing English courses for medical students or practicing physicians. The English curriculum developed by learners who are already trying to improve their skills are then called simultaneous/ In- Service. Additionally, post-experience: the English curricula created for learners who have prior knowledge of the subject. Alfehaid (2011) suggested that ESP courses emphasize students' growing linguistic and academic abilities to support all-around learning in their field. In considering this, the current definitions of ESP place a strong emphasis on three key ideas: the target language, the learners' learning objectives, and the particular academic or professional context in which the target language is taught and utilized.

To summarize, ESP courses are categorized into two main types, namely EAP and EOP. This classification signifies that ESP is suitable for individuals who are either studying a specific subject in English, pursuing a particular occupation that requires English, or both (Stevens, 1988).

2.3 Challenges in English Language Learning

Numerous factors, both internal and external, can present challenges in utilizing the English language. According to Brown (1994), language learners often struggle due to their limited vocabulary knowledge, encountering difficulties in comprehending numerous new and unfamiliar words. Moll et al. (1980) further elaborated that the challenge of using English as a second language arises from learners' inability to wield English skills comfortably. In Thailand, English education typically commences in primary school and continues throughout the educational journey. However, the predominant instruction is delivered by Thai teachers, whose native language is not

English. Consequently, this deficiency in exposure to authentic English environments results in a lack of proficiency in listening and speaking skills compared to reading and writing abilities among Thai students (Pinsaikeow, 2019).

This study delves into the examination of crucial academic English language skills, namely listening, speaking, reading and writing, in light of the challenges faced by researchers at TISTR during their research activities.

2.3.1 Listening

Listening is a major challenge for Thai people as Kanya (2014) stated that Thai people have difficulty understanding English because they lack a strong vocabulary, making it difficult for them to understand words, slang, idioms, and quotations. Additionally, listening to foreigners speaking in various accents is challenging. Maneerat (2019) studied the problem of listening skills among the staff at an international logistics company. They encountered problems when the speakers spoke quickly, and they were unable to comprehend or retain the key message. Some staff did not understand the technical terms. In a study conducted by Sae-Jeng (2019), the primary focus was on identifying the English language skill posing the greatest challenge to Thai tourist police officers stationed at a major international airport in Thailand. The research methodology involved administering a questionnaire to 30 officers. Findings revealed that listening proficiency emerged as the predominant difficulty, while the necessity for enhancing reading skills was underscored. Consequently, the study recommended the implementation of professional development initiatives along with the allocation of financial resources to address these needs. The study by Thapanee (2019) stated the most problematic skill in English communication skills is listening. The majority of the problems in English occur at academic or international meetings and when they have conversation with foreigners on the telephone and listening to English speech. Pongjuk (2018) illustrated the English communicative skill of Thai staff in an electronics company. The research findings showed that listening skill was the main problem. They cannot understand clearly understand the accent, tone of voice, stress patterns, and pronunciation while participating in English conversation. Another study by Oleh (2022) investigated needs and problems of English skill for the hotel front office staff in

Indonesia. The most problematic skill for the participants is listening skill when they listen to English during conversations especially via the phone.

2.3.2 Speaking

Speaking is the most challenging skill for Thai employees who work in Thai and international companies. According to the study Nuttaporn (2020) investigated needs and problems analysis in English of Thai customs officers. The most problematic skill was English speaking because they are afraid of making mistakes when they have to speak English. The study by Pawinee (2017) explored the problems of English language for aircraft heavy maintenance mechanics. The result revealed that speaking skills are the most problematic for the staff because they cannot use the proper word stress appropriately. The study by Apiwan (2019) surveyed the needs and problems of a group of soldiers in the infantry corps of the Royal Thai Army. The results revealed the biggest problem was speaking. They have problems when giving information to foreign visitors about the Royal Thai Army, giving details regarding the conditions and agreements of military procurement and explaining to foreign visitors about Thai military culture. The problem in speaking English in the workplace does not only occur in Thailand but also happens to foreigners whose their first language is not English. As Alfian (2021), stated speaking and listening are the most problematic because of the lack of vocabulary knowledge when using English Language to communicate with guests. The study by Hamdani and Ouahmiche (2022), the largest problem facing those who worked as hydraulics engineers in Algeria is speaking skills because they need to express the right technical words and present the projects.

2.3.3 Reading

Numerous research studies have highlighted that despite reading being commonly perceived as one of the less challenging language skills, reading difficulties continue to be a concern in certain ESP contexts. For instance, engineers in Taiwan encountered obstacles when reading emails, reports, and memos written in English (Spence & Liu, 2013). Similarly, cellular and molecular biology students in Algeria experienced difficulties in comprehending scientific texts (Faiza, 2010), while chemistry students in Iran found that reading chemistry texts posed challenges in terms of both speed

and comprehension (Rostami & Zafarghandi, 2014). The research conducted by Showail (2018) highlights a notable difficulty faced by nursing students. They are confronted with the daunting task of reading and comprehending a substantial amount of academic material. This poses a significant challenge as they must allocate their limited study time to sift through extensive literature to identify the most pertinent information for their nursing coursework. Furthermore, Thai engineering students were observed to face difficulties when reading articles related to engineering, inter-office documents, project reports, and manuals (Rajprasit, 2015).

Various strategies and skills play a crucial role in the development of ESP readers, as emphasized by Hirvela (2013). Identifying several primary reading strategies, skills, and sub- skills applicable in ESP, including prediction, skimming, scanning, discerning factual from non-factual information, making inferences and conclusions, and comprehending visual representations (Jordan, 1997). In the initial stages of ESP reading, Dudley-Evans and John (1998) underscored the importance of skimming and scanning, enabling ESP readers to determine whether they should read the entire text or focus on specific sections. In scientific contexts, ESP readers must also ascertain the author's stance, a critical aspect of scientific discourse. Moreover, ESP readers can benefit from acquiring essential skills like selecting relevant content for their specific purposes, recognizing organizational patterns, and utilizing cohesive and discourse markers (Chatsungnoen, 2015).

Recent literature on reading in ESP primarily focuses on enhancing comprehension. This comprehension encompasses fundamental reading skills, discourse analysis skills, the rhetorical aspects of texts, approaches related to reading strategies, and the development of reading abilities to improve comprehension (Hirvela, 2013). Within ESP studies, it has been observed that reading comprehension can be hindered by factors such as limited vocabulary, inadequate understanding of sentence structure, verb tenses, and text organization (Kavaliauskiene, 2002), as well as learners' prior knowledge (Kendeou & van den Broek, 2007).

In both English for academic purposes and English for occupational purposes contexts, there are similarities and differences in the specific reading tasks and activities required. In English for academic purposes, learners typically engage in reading books or

academic journals, note-taking, summarizing, paraphrasing, and subsequently writing essays. In these academic settings, learners are expected to possess a certain level of knowledge about reading strategies and sub-skills (Jordan, 1997). According to Showail (2018) research suggested that the primary and essential skill for nursing students is reading. This is because nursing coursework demands extensive reading from textbooks and materials provided by teachers to acquire the necessary knowledge. Additionally, reading proficiency plays a pivotal role in shaping the writing skills of nursing students. Insufficient reading capabilities can have a detrimental effect on the academic advancement of nursing students. Furthermore, Al-Tamimi and Shuib (2010) have identified similarities between the reading requirements in English for academic purposes and those in English for occupational purposes, particularly for petroleum engineering students. Common reading tasks include reading textbooks, technical articles in journals, instructions for assignments/projects, and report writing.

Nonetheless, the nature of reading in English for occupational purposes is highly contingent on the specific requirements of the job at hand. For instance, Dudley-Evans and John (1998) highlighted the essentiality of reading manuals for tasks related to maintenance procedures and equipment operation. Other research has demonstrated that engineers routinely engage with a variety of English materials, including textbooks, project abstracts, journals/publications, manuals, project documents, office paperwork, and safety signage. Similarly, hotel receptionists often find themselves reading faxes, emails, and reservation letters as part of their regular duties (Chatsungnoen, 2015).

Significantly, there is a noticeable absence of research into the reading tasks and activities within the domains of both English for academic purposes and English for occupational purposes, specifically in the field of science and technology. Consequently, the current study aims to address this gap in the existing literature.

2.3.4 Writing

Academic writing is a form of written expression that is primarily used by students and scholars. It holds a crucial role within the realms of research and education, distinguishing itself significantly from everyday writing and journalism. Academic writing exhibits distinct characteristics, including vocabulary adjustments that shift from

common language to technical terminology, and the requirement for an extensive academic vocabulary. Additionally, it often employs complex sentence structures, such as the passive voice (Swales & Feak, 2004). Charles and Pecorari (2016) differentiate academic English writing from general English writing by examining the linguistic characteristics of academic textbooks and comparing them to novels, which represent general English literature. They assert that academic written content must exhibit distinct language features or specialized usage specific to its field. In essence, academic texts diverge from general texts across various criteria.

Similar to other language skills, writing is considered one of the more challenging abilities for second language learners. For instance, Saudi postgraduate students encounter various difficulties in their English academic writing, including a lack of adequate academic vocabulary, the need to avoid plagiarism, proper utilization of cohesive devices, constructing logical arguments, establishing coherent connections between ideas, and demonstrating critical thinking in their academic writing (Alharbi 2018). Additionally, postgraduate students specializing in ICT fields at a Japanese university experienced challenges when it came to composing conference abstracts (Jie & Cross, 2014).

In the context of English for Occupational Purposes (EOP), employers in Malaysia expressed dissatisfaction with the English writing proficiency of graduates, while the students themselves perceived writing as their most challenging skill (Vaghari & Shuib, 2013). Students at the university and college levels often encounter challenges when it comes to writing (Gourlay, 2009). These difficulties can be attributed to factors such as low motivation, the absence of effective writing strategies, and the receipt of negative feedback, either from peers or instructors. Consequently, the development of research areas within English for Academic Purposes (EAP) can prove beneficial for materials creators, educators, and curriculum developers. It enables them to design academic writing programs (Hyland, 2009) that are specifically tailored to assist learners in effectively communicating their intended messages to an academic audience.

Similar to speaking, writing is a productive skill employed in communication. Proficient writers, capable of achieving the intended purpose of their writing and addressing the needs of their target readers, require a set of skills, notably planning,

drafting, and revising (Reid, 2001). According to Sabouni et al. (2017) emphasized the significance of academic writing by conducting a study aimed at enhancing the English academic and scientific writing abilities of Syrian students through a blended online course. The researchers identified a substantial lack of scientific research papers authored by Syrian scholars, which they attributed to deficiencies in English writing skills. Consequently, they advocated for the development of better courses and activities to bolster academic writing proficiency. Consequently, scholars have introduced various teaching approaches for writing, broadly categorized as process and product approaches (Hashemnezhad & Hashemnezhad, 2012; Swales, 1990).

The process approach emphasizes problem-solving, and the steps involved in writing. It initiates with the thinking stage, followed by processes such as organizing the writing plan into paragraphs, reviewing the initial draft, and making revisions to produce multiple subsequent drafts (Pasand & Haghi, 2013).

Conversely, the product approach places importance on the actual text elements and the end product or final text that the writer aims to create. This approach involves presenting a model text as a guide for the writer to produce a similar or analogous text. ESP writers can adapt this model to suit their specific writing purposes (Hyland, 2013).

Numerous research studies have delved into ESP writing with a focus on specific disciplines and professional fields. ESP writing encompasses a variety of genres, including composing basic personal information, emails, resumes, and business letters (Kaewpet, 2009; J.-Y. Liu et al., 2011). Within the realm of English for academic purposes, written texts feature prominently in various student tasks. These tasks range from crafting lab reports and field trip reports to taking lecture notes, writing test or exam answers, and preparing abstracts for projects, especially in the context of science students (Al-Tamimi & Shuib, 2010; Kaewpet, 2009; Liu et al., 2011).

In contrast, the scope of writing tasks and activities within the context of English for occupational purposes is notably broader compared to English for academic purposes. For instance, research in the field of engineering has identified a diverse array of writing tasks and activities, including the completion of safety checklists/forms, documenting meeting minutes, creating project abstracts, drafting business letters, and preparing and delivering oral presentations with slides (Kaewpet, 2009; Kassim & Ali, 2010). Within

the domain of business communication, writing tasks encompass both formal and informal emails, report writing, composing instructions, producing brochures, memos, sales-related materials, contracts, resumes, and generating official notices and meeting minutes (Vaghari & Shuib, 2013).

The following section provides an overview of the issues faced by researchers in the realm of English for occupational purposes and English for academic purposes.

(1) Vocabulary

Vocabulary serves as the cornerstone of any language, and this holds especially true for English. Without a robust vocabulary, individuals face limitations in effectively conveying their thoughts, both in written and spoken form. According to Coxhead & Nation (2001), academic vocabulary encompasses those frequently used words in academic writing that carry significant lexical meaning. These words provide writers with the tools necessary to articulate intricate concepts, such as "linguistic acts" and "scientific activities." Developing vocabulary skills is a critical component in achieving proficiency in other language abilities, particularly in writing and reading. In the realm of academic writing, a higher level of lexical density is required, necessitating a more extensive and diverse vocabulary (Nasiri, 2012). Consequently, writers are expected to employ academic and field-specific terminology or specialized technical jargon (Samigullina, 2018). According to Pochakorn et al. (2018), They claimed that their participants had difficulty writing in English because of their lack knowledge of grammar and vocabulary. The study of Purnananda (2021) revealed the difficulty of writing skill for the sales support staff in a private company were writing as in terms and conditions and emailing sales agreements because documents require the writer to use specific and complex legal terminology. Another study by Pongklee (2021) revealed writing was reported as the weakest skill. Due to a shortage of writing opportunities in the EFL classroom, the participants might consider that their writing abilities are deficient. Participants in the pre-service program might not be able to tell the difference between formal and informal language because they lack academic terminology.

The current study explored the variables that might be associated with academic writing challenges, including issues related to academic vocabulary. This could help in comprehending the writing challenges faced by researchers.

(2) Grammatical structures

Rivers (1970) suggests that for most individuals, grammar as a complex system of language rules that can be challenging to remember, given the numerous exceptions that accompany each rule. Grammatical structures apply to English sentences, clauses, and phrases, claims Chiachanpong (1998). The English language's grammatical structures as a set of rules defining the characteristics of the English language, wherein linguistic components must follow particular patterns when combined. Larsen-Freeman (2001) delineates grammar as the subconscious internal system employed by language users. He also notes a more focused definition, referring to it as the system that underlies a specific language, such as the grammar of English. The term “grammar” is used to describe the knowledge of how words are adapted and organized to create sentences. Hook & Crowell (1970) emphasize the connection between grammar and other crucial language elements, such as principles and patterns, and assert that studying grammar can enhance students' speaking and writing abilities. In the realm of second language acquisition research, it is observed that grammar also signifies the linguistic or grammatical competence—the knowledge of language that speakers possess in their minds (Cook, 1996). Cook further suggests that while other language components hold intrinsic importance, they are interlinked through the grammar system.

Several research studies have highlighted the significance of grammar rules as a substantial concern within the domain of writing skills. In a study conducted by Hiranprajak (2019) investigated the problems and needs in using English skills of Thai specialist teachers at a private primary school, the findings indicated that among the four English skills assessed, writing skill emerged as the most problematic. The teachers expressed concerns related to language proficiency levels, word selection, and adherence to grammar rules. Similarly, Chanphram (2009) carried out research to explore the difficulties associated with English proficiency, with a specific focus on grammar, within the writing skills of undergraduate students in Thailand. The results from this study

emphasized that students do, in fact, face challenges related to English proficiency, particularly in the domain of grammar as it relates to their writing skills. Furthermore, Kepnil (2020) conducted an investigation aimed at identifying issues in email composition among Thai workers employed in a logistics company. The study outcomes indicated that the most prevalent problem among participants when writing emails was related to the organization and formatting of their messages, followed by concerns about writing grammatically accurate emails and selecting appropriate words.

In summary, grammatical structures encompass a multitude of crucial and intricate components. These structures can be categorized into various levels, ranging from the fundamental to the advanced, depending on different aspects. In the context of writing, authors are required to employ sophisticated grammatical structures to craft sentences or narratives that are not only aesthetically pleasing but also effectively convey the intended meaning of their content. Therefore, proficient writers must first acquire a solid grasp of the foundational elements of grammatical structures before skillfully integrating all levels of grammatical complexity in their work.

(3) Coherence

Another aspect of crafting a strong paragraph is the ability to link ideas back to the central theme, a process known as coherence in writing. In summary, when these techniques are employed during the writing process, it is possible to create meaningful paragraphs (Faradhibah, 2017). Coherence in writing represents a vital skill for achieving clarity and fluency in one's writing. A paragraph that exhibits coherence establishes clear connections between the supporting details that bolster the main concept. Writers can achieve coherence by organizing their ideas in a chronological or hierarchical manner, aligning them with their respective levels of importance (Chicho, 2022).

Acquiring this skill empowers writers to imbue their text with significance and establish a sense of unity that aids readers in grasping the writer's intended message. The concept of coherence may seem abstract and challenging to acquire, yet it is recognized as a pivotal component of advanced-level academic writing (Connor, 1990; Connor & Johns, 1990).

In a broader sense, 'coherence' entails the construction of meaning for readers by forging connections between ideas. Zor (2006) defines coherence as the underlying semantic relationships that enable a text to be comprehensible. Put simply, a text is considered coherent when it is logical and understandable. Coherence has also been characterized as an outcome resulting from an interaction between the text and its audience, whether in spoken or written form (Tanskanen & Benjamins, 2006).

Numerous research studies suggest that English as a Foreign Language (EFL) learners often struggle with developing coherence skills in their English writing. For instance, Lee (2002) conducted a study investigating the impact of coherence instruction on sixteen ESL students at a university in Hong Kong. The findings revealed that students significantly improved their ability to demonstrate coherence in their writing after receiving effective coherence instruction. Similarly, Buckingham (2008) delved into the experiences of thirteen Turkish scholars from a distinguished Turkish university's humanities faculty as they developed their discipline-specific second language writing skills. The results indicated that students encountered challenges at both the sentence and paragraph levels when working on their postgraduate coursework papers. Furthermore, in a study conducted by Chicho (2022), various factors affecting EFL learners' writing skills, both positively and negatively, were explored. This research encompassed aspects related to writing skills, writing difficulties, and the influences on writing. The findings pointed to obstacles such as anxiety and difficulties in connecting ideas, sentences, and words as primary issues faced by EFL learners. These challenges were also noted to be particularly daunting for researchers writing their research papers in English.

To summarize, this study focuses on investigating the challenges researchers at TISTR encounter when it comes to academic reading and writing within their professional roles. The study outcomes provided insight into the challenges researchers perceive and offer solutions to help them address these issues effectively.

2.4 Related Studies

There are many relevant studies on the professional needs and challenges development in English Proficiency from various researchers as follows:

2.4.1 National Related Studies

Kluensuwan. et al. (2019) studied Needs analysis of English for engineering staff in the electronics industry. The purpose of the study was to examine the English language needs of 190 engineers, engineering operators and administrative staff in the electronics industry. This study used a mixed methodology, and its instruments were a questionnaire and a semi-structured interview. The findings revealed that speaking skills were most in needed skill. The participants considered that speaking and conversational skills were to be the most needed among the engineering staff followed by listening, reading and writing respectively. They required proficiency in English in three main areas, including everyday conversation, technical and business material. They also recognized the importance of English and expressed an interest in studying it but they primary concerns were time, family, work schedules, and finances.

Soisuwan. et al. (2019) explored roles, characteristics and professional Needs of Instructional Assistants in an International School in Nonthaburi. The objectives of the study to investigate the roles, to find out the characteristics, and to explore the professional needs of instructional assistants in an American international school. This study used mixed method; The participants of this study were 69 instructional assistants of the school. The questionnaire and in-depth interviews was used to collect their views of the roles, characteristics and professional needs. The findings provided information in four main categories. First, the most important roles of the instructional assistants were supported the students in caring for themselves. Second, the best characteristics of instructional assistants was having enthusiasm while working. Third, the most important professional needs were to constantly update knowledge of ICT, learn about teaching methods, and be knowledgeable in their primary disciplines. Fourth, the three skills that the instructional assistants needed to develop were 1) knowledge skills 2) teacher skills and 3) problem-solving skills of children behavior.

Orapin (2019) determined the needs for English language proficiency of employees in a chemicals business company. The purpose of this study was to identify the English language abilities used and needs in the improvement of English language skills of the staff. The quantitative method was used in this study. The questionnaire was distributed to 120 staff who were working for a chemicals business company from four

departments but only 100 questionnaires were returned. The data were analyzed by using the Microsoft Excel program. The findings showed that the employees needed to be proficient in all four English language skills. The results also revealed that reading is the most needed skill for participants because reading English-language emails from both Thai and foreigners was the activity they participated in the most. In addition, the majority of participants need to improve their English language abilities. They agreed that the greatest way to develop their English language skills was to watch English soundtrack movies with subtitles.

Ruenvongsa (2020) surveyed Young Smart Farmers' needs for English language to improve their communication abilities and the support from the government to help them improve the use of English. The participants of this study were 41 Thai Young Smart Farmers. The questionnaire was used in this study to obtain quantitative data and opinions of participants. The descriptive statistical values were determined by using SPSS to examine the quantitative data collected from the participants. The level of improvement needed in English language proficiency was measured using a five-point Likert scale. The average level and data variability were measured using arithmetic means and standard deviations in order to find out the participants' opinions. The findings showed that reading was the skill that YSFs need to develop the most followed by speaking, listening, and writing. The result from open-ended question found that the majority of the participants need to improve their English in order to better themselves, use it in their marketing and businesses, and educate others, whether in their family or in the organization. The participants stated that they desired to be able to work, speak English as a second language, and communicate with foreigners more efficiently. Additionally, the participants would be grateful for assistance from the government in improving their English language abilities.

Sugarin (2020) conducted an investigation into the language challenges encountered by lawyers in Thailand and identified the primary English skills they require. The research involved 160 participants, all of whom held law degrees. To gather data, a combination of closed-ended and open-ended instruments were employed. The findings indicated that among the essential skills, speaking and writing presented the most difficulties for Thai lawyers. Furthermore, the study highlighted that enhancing speaking

abilities was the area of greatest interest for improvement among the participants. In terms of methods to enhance their English language skills, the participants viewed self-guided learning and consistent practice as the most effective approaches.

Surakkitthikul (2020) investigated the English development needs and challenges encountered by support staff at a university in Nakhon Pathom Province, Thailand. The study included 31 participants employed at an international college within the university. Employing a questionnaire, the research solicited information on participants' demographic background, English skill-related needs and challenges in the workplace, and desired areas for improvement in English proficiency. Data analysis was conducted using Microsoft Excel to compute frequencies, percentages, means, and standard deviations. Results indicated that support staff at the university exhibited moderate overall requirements for enhancing listening, speaking, reading, and writing skills in English. Furthermore, the primary challenges faced by support staff were identified as relating to listening and speaking skills.

Purnananda (2021) studied the needs and difficulties in using English skills of sales support staff in a private company in Thailand. The aims of this study were to investigate and identify the important English skills needed and difficulties for sales support staff in the workplace. This research used quantitative method. The questionnaires were allocated to 68 sales support staff via email. The data was analyzed by SPSS program. The findings showed that proficiency in the English language was required for the sales support, especially the most essential skill, which was reading, as it was used for reading daily emails. The study also revealed that the difficult skills for the sales support were speaking and listening. The most difficulty for the sales support in this study was listening to Indian accents and idiomatic English.

Kaewkunha (2021) conducted needs analysis of the English language for Thai employees in Service industry. The aims were to explore the needs, lacks and wants of English-language skills among Thai employees. Mixed methods were used in this study, the questionnaire was collected from 324 Thai employees, and Semi-structured interviews was collected from 10 participants for in-depth information. The frequency, percentage, mean scores, and standard deviation were used to statistically analyze the quantitative data and content analysis was used for the data from the semi-structured

interview. The results showed that the four English skills that Thai employees most needed were listening, speaking, reading, and writing. The four skills where people felt they lacked the most were in writing, speaking, reading and listening respectively. Furthermore, the skills that Thai employees most desired to improve were speaking, listening, reading, and writing. The research also showed that the most crucial abilities for service providers were listening and speaking. Additionally, the qualitative results indicated that writing was the skill that most lacking. However, speaking was the skill that they most needed to improve.

Pongklee (2021), focused on conducting a needs analysis of English language skills among Thai pre-service teachers. The study involved 220 senior students majoring in non-English disciplines from universities in northeastern Thailand. A mixed-method approach was employed to gather data. Results revealed a significant demand for English language proficiency among Thai pre-service teachers. Participants from Thai universities identified listening as the most essential skill, followed by speaking, reading, and writing. Furthermore, they noted deficiencies primarily in writing skills, followed by speaking, listening, and reading. The lack of proficiency in writing skills is a prevalent issue among English learners across different proficiency levels, often stemming from challenges in academic writing and vocabulary acquisition. Lastly, participants expressed a strong preference for enhancing listening skills, followed by speaking and writing skills, in preparation for their future careers as Thai pre-service teachers.

Tonklay (2022) assessed the perceived needs of four English language skills among novice medical doctors from a public hospital in Surin province using questionnaires and interviews as research tools. The results showed that the participants had a moderate level of English proficiency, with reading skills being considered the most proficient among the four language skills. Regarding necessity, the findings indicated that reading was the most crucial skill for novice medical doctors, signifying a high demand for understanding medical literature, research papers, patient records, and other pertinent documents in the medical field. These results offer practical insights for medical education programs and curricula, proposing the inclusion of language training to prepare future medical professionals with the essential abilities for effective communication and the delivery of high-quality healthcare services.

In summary, previous research conducted in Thailand has identified various occupations that require the use of English, particularly focusing on academic English. However, there has been no study specifically examining the use of English by researchers in Thailand. This gap in the literature has motivated my interest in pursuing this study.

2.4.2 International Related Studies

Ahmed et al. (2020) identified the essential maritime English skills required by Bangladeshi seafarers when working on ships and determined the expected level of maritime English proficiency by recruiting agencies in Bangladesh. It involved 135 senior cadets and 24 recruiting agencies, utilizing both quantitative and qualitative data collection methods. The research identified 68 on-board maritime tasks, categorizing them based on their level of importance, with 23 tasks considered highly crucial by the respondents. The findings highlighted the significance of communication efficiency, particularly speaking skills, as many recruitment agencies in Bangladesh assess candidates' spoken language abilities during interviews. Most manning agencies expected intermediate proficiency in speaking and elementary proficiency in listening, reading, and writing, whereas senior cadets stressed the importance of using all four language skills for on-board tasks.

Burris-Melville (2020) Investigated the challenges undergraduate students face in academic writing in Jamaican University. A mixed-methods study was conducted to explore the academic writing challenges experienced by undergraduate students, as well as the factors perceived to impede the development of their writing skills. Results indicate that students encounter significant difficulties primarily related to referencing, grammar, mechanics, vocabulary, and discourse. Both students and lecturers attribute these challenges to various factors, including students' apprehension towards writing, the linguistic context in Jamaica, insufficient motivation, and the absence of a writing across the curriculum initiative.

Alfian (2021) studied needs analysis on English language use by Hotel Staff in Indonesia. The purpose of this study was to identify the English language skill for a specific field and to analyze the English language needs of Hotel Staff. This study was

conducted during the Covid- 19 pandemic, the questionnaire was distributed to all participants through email and WhatsApp to prevent Covid- 19 virus infection. Questionnaires were allocated to 27 hotel staffs in Bandung to identify the difficulties they encounter with the English language and the specific areas where they need to improve their proficiency. The results showed that English language use in the hotel industry has been rated as being crucial by the participants. The Hotel Staffs rated speaking is the most needed language skill followed by Listening, Writing, and Reading. The highly needed language functions are providing information about hotel facilities and services and answering question and handling complaint. However, the problems that Hotel Staffs confronted while using English at work are they have anxiety whilst communicating with customers in the English language due to their limited vocabulary and their inability to hear and understand certain foreign accents and pronunciations.

Oleh (2022) discovered problems and needs in using the English skills of the Room Division Staff in the hotel at Lombok. The purpose of study was to determine the problems staff encounter in English communication and the skill mostly need for using English language. This research used a quantitative method, questionnaires were gathered data from 60 staff members. The pilot study was sent to 20 Room Division Staff to discover ambiguous language and provide suggestions. The data was analyzed by the Statistics Package for Social Sciences (SPSS). The results revealed that speaking skill is the most needed in order to respond to the customer's wants, solve problems, and give information. According to the results listening skill is the most problematic, listening English during conversations by phone because of unclear pronunciation via the phone.

Hamdani and Ouahmiche (2022) surveyed the English language needs of Hydraulics Engineers in Algeria. The study aimed to identify the English Language skills and competencies of hydraulics engineers used in their workplace and the English language needs and problems they encountered. This research used a mixed method were close-ended and open-ended questions. A questionnaire was distributed to 50 engineers working in different hydraulics settings. The quantitative data was calculated and analyzed descriptively and qualitative data were grouped and analyzed by concentrating on the most common responses for each choice. The findings demonstrated that the use of English language skills in their workplace are listening and speaking. The most

difficult problem when using English is speaking to foreigners about field-related topics and the most needed skills are oral presentations of projects and speaking with foreign workers or engineers about field-related subjects. The employees suggested that the company should create training appropriate for Algerian hydraulic professionals.

Malini. et al. (2022) conducted the needs analysis of English language training for tourism employees working in hotels and restaurants in Indonesia. The purpose of this study was to analyze the specific English language needs in the local tourism industry to develop a need analysis for English language training for hotel and restaurant staff in order to strengthen the neighborhood. This research used a mixed method, the questionnaire and interviews were gathered from 36 respondents with employees and administrators. As part of the observations, discusses between visitors and hotel or restaurant staff members as well as between visitors and tour guides and members of the local community were recorded in real-time. The data from the questionnaire were analyzed by simple non- parametric statistics. The data from the observations were qualitatively examined using real-world communication settings with an emphasis on the English language proficiency of hotel and restaurant staff, as well as guides or community members when dealing with visitors. The results demonstrate that the most needed skill in the workplace is speaking skill because they need to speak with foreign visitors who are visiting Mushroom Bay's tourism hotspots.

Stalnaker (2023) conducted a study to explore the perceived origins of speaking anxiety and gain a deeper understanding of the lived experiences of English-speaking anxiety among Brazilian adult learners of English as a Foreign Language (EFL). The research was carried out at a private language school in São Paulo, Brazil, using a mixed-method approach to comprehensively capture the foreign language speaking anxiety phenomenon in the Brazilian context. The results revealed that the majority of participants attributed speaking anxiety to a fear of being criticized or judged by others. Additionally, anxious learners tended to exhibit excessive concern regarding making errors. Furthermore, various social-cultural, contextual, and personal factors were identified as influencing participants' anxiety levels when speaking the second language.

In summary, previous research conducted in Thailand and various other countries has shown that proficiency in all four language skills - speaking, listening,

reading, and writing - is crucial for both career advancement and educational success. There is a growing demand for professional English courses among employees. The current study is centered on assessing the specific English language requirements in a professional workplace setting, particularly for researchers. This research not only delves into General English but also investigates the specific language needs of professional researchers. In terms of English proficiency, the study covers not only the core language skills but also addresses grammar, vocabulary, and coherence. Furthermore, this research is unique in its focus on researchers, making it a previously unexplored area of investigation.

CHAPTER 3 METHODOLOGY

This chapter described the research methodology of this study and consists of the following:

3.1 Research Design

3.2 Population

3.3 Research Instruments

3.4 Data Collection

3.5 Data Analysis

3.1 Research Design

The purposes of this study were to analyze the situations at the workplace and identify the professional needs in English language used at the workplace for researchers in the Research and Development Group for Bio- Industries at The Thailand Institute of Scientific and Technological Research (TISTR). After that, to design activities to meet the challenges of English language used at the TISTR, with the aim of assisting individuals in enhancing their workplace English skills. This study used mixed methods including quantitative and qualitative methods for gathering data. Semi- structured interviews were used to collect all the relevant data. The questionnaire was written in two versions English and Thai, in order to prevent any misunderstandings. The researcher conducted a pilot in order to test for understanding and find mistakes in the questionnaire and interviews. Cronbach's Alpha Coefficient was applied to evaluate the reliability of the pilot data, resulting in a Cronbach's Alpha value of 0.99 for the questionnaire. Additionally, the content validity and reliability of the questionnaire items were evaluated using the Item - Objective Congruence Index (IOC). The final version of the questionnaire was distributed to the participants via the google form link.

3.2 Population and Samples

In this study, the research population focuses on senior researchers, researchers and research assistants who work in the R&D Group for Bio- Industries, the group comprises 4 centers and 1 research station as following: Expert Centre of Innovative

Agriculture, Expert Centre of Innovative Health Food, Expert Centre of Innovative Herbal Products, Biodiversity Research Centre, and Lamtakong Research Station.

(1) Questionnaire

The total number of senior researchers, researchers, and research assistants in 4 centers and 1 research station in the R&D Group for Bio- Industries was 98. The questionnaire was sent to 98 researchers, but only 80 were returned.

(2) Interviewees

The interview participants of this study were divided into three groups. For the first group, the participants are the officer of Human Resource Management Division and the officer of the International Relations Division who work and coordinate with the researchers at TISTR. The selection for the second group of semi-structured interviews were determined by their completion of the last section of the questionnaire and their readiness and availability to participate in an interview. The second group are senior researchers, researchers, and research assistants who work in 4 centers in the R&D Group for Bio-Industries to collect for in dept data after the questionnaire. The findings obtained from both the questionnaires and interviews from the second group were presented to the third group of participants. This third group comprises four directors from the R&D Group for Bio-Industries, and two director of the International Relations Division, and Human Resource Development Division at TISTR. Purposive sampling was applied to the first and third group.

3.3 Research Instruments

The research instruments of this study are questionnaires and semi-structured interviews, to collect the data in order to analyze the situations at the workplace and identify the professional needs in English language used at the workplace for researchers at TISTR. According to Techapun (2014) the mixed method not only gathers information through diverse data collection methods, but it also diminishes non-sampling errors and safeguards against the introduction of biased information that may arise when collecting data from multiple sources. Mackay and Mountford (1978) along with Robinson (1980)

concur that questionnaires and structured interviews are the two primary formal methods for collecting crucial information in a needs analysis (Techapun, 2014). The questions in the questionnaire and semi- structured interviews based on various Hutchinson and Waters' (1987) frameworks of Target Situation Analysis, Present Situation Analysis, and previous studies.

3.3.1 Questionnaire

The questionnaire was designed for three types of researchers working at the R&D Group for Bio- Industries, TISTR in Pathum Thani. According to Dudley-Evans and St John (1998) the methods used to gather information from a needs analysis included checklists and questionnaires, structured interviews, analysis of authentic texts, discussion, and record keeping. The questionnaire of this study was based on various Hutchinson and Waters' (1987) frameworks of Target Situation Analysis, Present Situation Analysis, and previous studies. The questionnaire's contents were formulated based on the information gathered during the initial interviews with the officer of Human Resource Management Division and the officer of the International Relations Division. The questionnaire consisted of three parts as follows:

Table 3.1 The Structure of the Questionnaire

Part	Dimensions	Location
1	Background information	Q1- Q7
2	Challenges in English language used at workplace	Q1-Q30
3	Professional needs in English language used at workplace	Q1-Q30

A five-point Likert scale was adopted from Phuyathip (2019) to explore the levels of challenges in the English language used at the workplace and professional needs in the English language used at the workplace.

Table 3.2 The 5-point Likert Scale

Likert Scale description	Likert Scale	Mean Scores
Very High	5	4.21 – 5.00
High	4	3.41 – 4.20
Moderate	3	2.61 – 3.40
Low	2	1.81 – 2.60
Very Low	1	1.00 – 1.80

3.3.2 Semi-structured Interview

Semi-structured interviews were used as the qualitative method in this study. It was used for the officer of Human Resource Management Division and the officer of the International Relations Division in the initial interviews. Interviewees were asked to share their perspectives on the English usage situation that researchers in TISTR work with. The primary question, derived from Hutchinson and Waters' (1987) needs analysis framework, is as follows.

What is the situation regarding the use of the English language by researchers in the professional field?

Subsequently, the interviewer analyzed the information obtained from the participants in the initial group to formulate the questionnaire and interview questions for researchers from each center within the R&D Group for Bio-Industries at TISTR in Pathum Thani. The questions were designed to ask about challenges, professional needs of English language used at workplace, and opinion toward an English language training course for researchers at TISTR, which were related to the questionnaire for in-dept information. According to Newby (2010) the semi-structured interview enables researchers to gain a profound insight into subjects or individuals, as interviews offer a means to explore issues, personal histories, meaningful aspects, feelings, perspectives, attitudes, opinions, and emotions. The questions for the interview consist of two questions as follows.

(1) What situation in professional context do you most frequently use English language?

(2) What English skill is the most necessary for your career work?

These questions were verified by three experts to check their validity and appropriateness.

After obtaining findings from both the questionnaires and interviews the second group were presented to the third group of participants. This third group comprises six people, four directors from the R&D Group for Bio- Industries, one director of the International Relations Division, and one director of Human Resource Development Division at TISTR. The question was asked about the guidelines that are designed to enhance the English language used at the workplace for researchers in TISTR.

3.3.3 Validity and Reliability

Before administering the questionnaire, it was sent to three experts for validation through the Item-Objective Congruence (IOC) Index, which assessed the suitability of each item. The experts rated each item on a scale from -1 to +1, indicating whether it should be included.

Additionally, a pilot study was conducted with a sample of thirty researchers from the R&D Group for Sustainable Development. The purpose of this pilot study was to identify any ambiguous or unclear items, test content comprehension, and gather suggestions for refining the final questionnaire. Cronbach's Alpha Coefficient was applied to evaluate the reliability of the pilot data, resulting in a Cronbach's Alpha value of 0.99 for the questionnaire.

3.4 Data Collection

In the first step, the officer of Human Resource Management Division and the officer of the International Relations Division were interviewed in Thai, and these interviews were recorded. Afterwards, the recordings were transcribed and translated from Thai into English. The objective is to gather information necessary for analyzing the English language situation encountered by researchers. The questionnaires and interviews inquiries derived from the analysis of data in the initial group was distributed directly to 80 researchers from each center who are part of the R&D Group for Bio- Industries at TISTR. The selection for the second group of semi-structured interviews were determined by their completion of the last section of the questionnaire and their readiness and

availability to participate in an interview. After obtaining findings from both the questionnaires and interviews from the second group, the result was presented to the third group of participants. The third group of interviewees were four directors from the R&D Group for Bio-Industries, one director of the International Relations Division, and one director of Human Resource Development Division at TISTR. The data were collected in two weeks. Before distributing the questionnaires and interviews to participants, the pilot study was distributed to 30 researchers in the Research and Development Group for Sustainable Development, TISTR.

Due to ethical considerations, the researcher was sent a letter for permission to conduct the research to TISTR and the participants were requested to complete a consent form before the data collection begins. Plus, in the semi-structured interview, the participants' names were replaced by pseudonyms for the protection of confidentiality and privacy.

3.5 Data Analysis

3.5.1 Quantitative Data Analysis

The information collected from the questionnaires was analyzed utilizing the Microsoft Excel software to calculate frequency, percentages, means, and standard deviations.

Part 1: Percentage, frequency, means and standard were used to describe the Background information.

Part 2 - 3: Percentage, frequency, means, and standard deviations were used to analyze the information about Challenges and professional needs in English language used at workplace.

3.5.2 Qualitative Data Analysis

The examination of the data gathered from the semi-structured interviews followed Litchman's (2013) Three Cs (Coding-Category-Concept) Process, which involves analyzing a large set of unsorted data inductively to identify a central concept that can explain the different elements are grouped together. The researcher transcribed and translated the interviews from Thai to English for all three sample groups. Each

transcript was then thoroughly reviewed to gain a comprehensive understanding. Words and phrases were assigned distinct descriptive codes to highlight the key and essential features of the data. These codes were used for notable descriptions and ideas, irrespective of their direct relevance to the research questions.

After organizing the codes, they were grouped into core categories based on common themes. Once the categories were formed, the researcher revisited and analyzed them along with emerging issues until a conceptual framework developed from the data, capturing the essence of the phenomenon. Ultimately, the data is presented through tables, and discussed in detail. The figure illustrates the process of analyzing qualitative data.

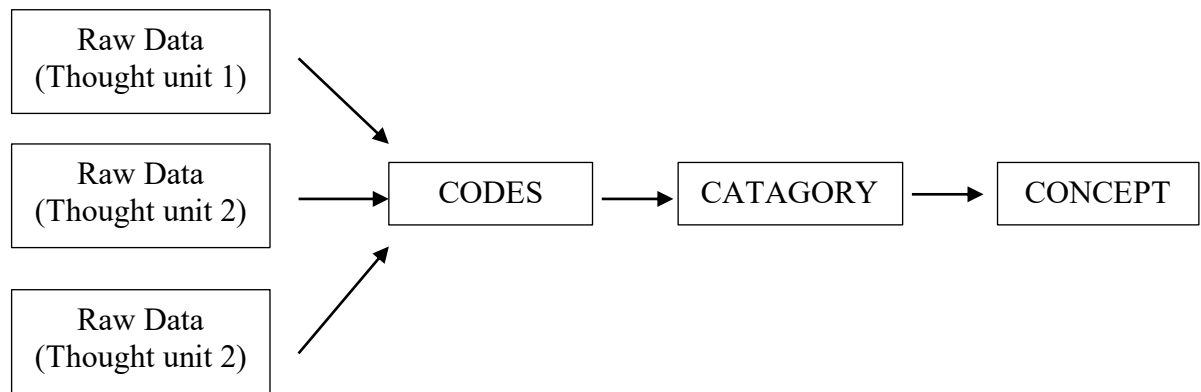


Figure 3 Three Cs (Coding- Category-Concept) Process by Lichtman's (2013)

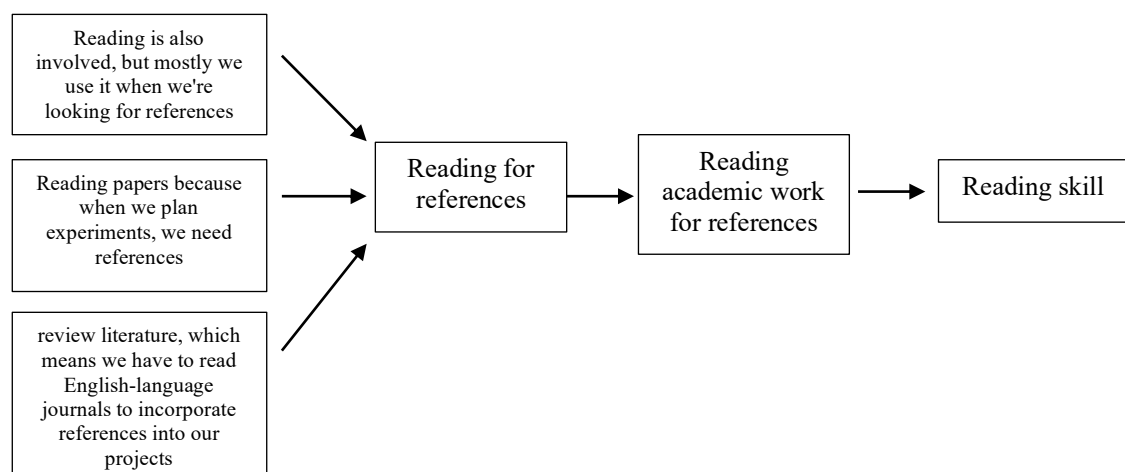


Figure 4 The Example of Three Cs (Coding- Category-Concept)

CHAPTER 4

FINDINGS

This chapter consists of the findings which were collected through two research instruments including questionnaires and semi-structured interviews. This part has been divided into six sections. The findings that were collected from the participants in the initial group through semi-structured interviews were analyzed to answer the first research question, while the findings from the questionnaire and semi-structured interviews were analyzed to answer the second research question. After analyzing findings from the second group, the results were presented to the third group of participants and semi-structured interviews were analyzed to answer the third research question. The findings are reported for the three research questions of the study are as follows:

1. To analyze the situations in the English language used at the workplace of researchers in TISTR.
2. To identify the professional needs in the English language used at workplace for researchers in TISTR.
3. To design guidelines for professional development of English language used at workplace for researchers in TISTR.

4.1 General background of the Participants

4.1.1 Background of researchers in TISTR

The demographic data consists of questions on gender, age, education, working experience, profession, department, and frequency of using English in the workplace. The subject of this study comprises 80 senior researchers, researchers, and research assistants from R&D Group for Bio-Industries, TISTR.

Table 4.1 Background of researchers in TISTR

General Background Information (N = 80)		Frequency	Percentage (%)
Gender	Male	21	26.2
	Female	59	73.8
Total		80	100
Age	25 – 30 years	6	7.5
	31 – 35 years	15	18.8
	36 – 40 years	18	22.5
	41 - 45 years	18	22.5
	45 years and above	23	28.7
Total		80	100
Education	Bachelor degree	8	10
	Master degree	41	51
	Doctorate degree	31	39
Total		80	100
Working Experiences	1 – 5 years	20	25
	6 – 10 years	18	22.4
	11 – 15 years	11	13.8
	16 – 20 years	11	13.8
	More than 20 Years	20	25
Total		80	100
Departments	Expert Centre of Innovative Agriculture	27	33.8
	Expert Centre of Innovative Health Food	17	21.2
	Expert Centre of Innovative Herbal Products	20	25
	Biodiversity Research Centre	16	20
	Total	80	100
Current Position	Senior researcher	13	16.3
	Researcher	45	56.2
	Assistant research officer	22	27.5
Total		80	100

The results of General Background Information are presented in the following tables.

Table 4.1 shows that the total number of participants who were senior researchers, researchers, and research assistants was 80. The majority, 59 people (73.8%) were women, while 21 people (26.2%) were men.

The most common range was 45 years and above, with 23 people (28.7%), followed by 41 – 45 years, and 36 – 40 years were calculated equally with 18 people (22.5%), 31 – 35 years, with 15 people (18.8%), and 25 - 30 years were the smallest group with 6 people (7.5%).

The researchers mostly possessed a Master degree, 41 people (51%), while 31 people (39%) had a Doctorate degree, and 8 people (10 %) had a Bachelor degree.

Most of them had been working as researchers for more than 20 years and 1 - 5 years, were calculated equally with 20 people (25 %), followed by 6 - 10 years work experience with 18 people (22.4%), while 11 – 15 years and 16 – 20 years work experience, were calculated equally with 11 people (13.8%).

The participants worked in different departments of study. The largest group of participants worked at Expert Centre of Innovative Agriculture with 27 people (33.8%), followed by Expert Centre of Innovative Herbal Products with 20 people (25%), Expert Centre of Innovative Health Food with 17 people (21.2%), while 16 people (20%) worked at Biodiversity Research Centre.

The majority, 45 people (56.3%) were researchers, while 22 people (27.5%) were research assistants, and 13 people (16.3%) were senior researchers.

Table 4.2 The frequency of using English language skills in the workplace

Skill	Mean	S.D.	Meaning
Listening Skill	2.92	0.68	Sometimes
Speaking Skill	2.66	0.72	Sometimes
Reading Skill	3.57	0.93	Most of the time
Writing Skill	3.00	0.75	Sometimes
Total	3.04	0.77	Sometimes

This section presents the participants' perspectives on the frequency of utilizing English language skills within their workplace. Participants indicated that they frequently employed English language skills for their job tasks (Mean = 3.04). Among these skills, reading (Mean = 3.57) was reported as the most commonly used, followed by writing (Mean = 3.00). However, participants considered listening (Mean = 2.92) and speaking (Mean = 2.66) to be less frequently utilized in their professional duties (see Table 4.2).

4.2 Challenges in English language used at workplace

In this part, the data analysis of the challenges in English language used at workplace of the participants were presented. Participants were asked to assess the extent of challenges they faced in listening, speaking, reading, and writing, and subsequently rate their proficiency in each of these language skills.

The data were recorded on a five-point Likert scale as follows:

Scale	Level	Mean Scores
5	Very High	4.21 – 5.00
4	High	3.41 – 4.20
3	Moderate	2.61 – 3.40
2	Low	1.81 – 2.60
1	Very Low	1.00 – 1.80

In subsequent discussions and tables, responses indicating 'very low' and 'low' were combined and labeled as 'low challenge', whereas those indicating 'high' and 'very high' were classified as 'high challenge'. Responses categorized as 'moderate' were retained as 'moderate challenge'.

Table 4.3 Summary of Challenges in English Language Utilization in the Workplace across All Four Skills

Skill	Mean	S.D.	Meaning
Listening	2.96	1.06	Moderate
Speaking	2.93	1.16	Moderate
Reading	2.95	1.15	Moderate
Writing	3.09	1.17	Moderate
Total	2.98	1.14	Moderate

From the overall summary of the challenges in using English language among researchers, it was found that the researchers responded in the questionnaire indicating a moderate level of challenges in all skills. Writing skill appeared to pose the greatest challenge among the four skills (Mean = 3.09), followed by listening skill (Mean = 2.96), reading skill (Mean = 2.95), and speaking skill (Mean = 2.93), respectively.

Table 4.4 Listening Skill Challenges of researchers

Listening skill	Mean	S.D.	Meaning
1. Listening to English conversation with foreigners	3.00	0.98	Moderate
2. Listening to English conversations on the telephone	2.85	1.17	Moderate
3. Listening to the English presentations in academic or international meeting	3.05	1.02	Moderate
4. Listening to English-language question and answer at academic or international meetings	3.11	1.14	Moderate
5. Listening to academic English speech in conferences	2.90	1.17	Moderate
6. Listening to suggestions in English	2.96	1.07	Moderate
7. Listening and comprehending information from English lecture class	3.05	0.87	Moderate
8. Listening to tape recording for international meetings/ proceeding	2.82	1.04	Moderate
Total	2.96	1.06	Moderate

The findings from table 4.4, indicate that senior researchers, researchers, and research assistants reported moderate levels of proficiency in their reading sub-skills (Mean = 2.96). Participants across these roles identified significant challenges in comprehending English-language discourse within academic or international contexts. Notably, the highest-rated challenge pertained to listening to English-language question and answer at academic or international meetings (Mean = 3.11), while listening to tape recording for international meetings/ proceeding presented relatively lower levels of difficulty in comparison (Mean = 2.82).

Table 4.5 Speaking skill Challenges of researchers

Speaking skill	Mean	S.D.	Meaning
9. Making conversation with foreigners	2.88	1.03	Moderate
10. Speaking on the telephone with foreigners	2.85	1.16	Moderate
11. Greeting and welcoming foreigners	2.87	1.04	Moderate
12. Making an English-language discussions at academic or international meetings	3.02	1.22	Moderate
13. Oral presentation on research project proposals in English	3.00	1.19	Moderate
14. Reporting on the projects in English language	2.95	1.19	Moderate
15. Making a speech in English	2.93	1.32	Moderate
16. Giving advice or suggestions in English	2.90	1.09	Moderate
17. Making questions and answers in English in academic conferences	3.01	1.19	Moderate
Total	2.93	1.16	Moderate

According to the data presents in Table 4.5, the challenges associated with speaking skills garnered an average score of 2.93, indicating a moderate level of difficulty. Among researchers, the most significant challenges in speaking skills were making an English-language discussions at academic or international meetings (Mean = 3.02), followed closely by making questions and answers in English in academic conferences (Mean = 3.01), and oral presentation on research project proposals in English

(Mean = 3.00). Conversely, speaking on the telephone with foreigners exhibited the lowest mean score in challenges related to speaking skills (Mean = 2.85).

Table 4.6 Reading skill Challenges of researchers

Situations	Mean	S.D.	Meaning
18. Reading letters or e-mails in English	2.96	1.13	Moderate
19. Reading articles, journals, or academic research papers in English	3.06	1.15	Moderate
20. Reading English documents in academic or international meeting	3.02	1.10	Moderate
21. Reading English newspaper/ leaflet/ announcement	2.86	1.11	Moderate
22. Reading contracts and legal documents in English	2.96	1.28	Moderate
23. Reading the criteria for research grant applications	2.82	1.15	Moderate
Total	2.95	1.15	Moderate

Table 4.6 reveals that participants generally assessed their reading skill challenges at a moderate level, with an average score of 2.95. Significantly, the highest mean score for reading challenges were attributed to reading articles, journals, or academic research papers in English (Mean = 3.06). On the other hand, participants encountered relatively fewer challenges in reading the criteria for research grant applications, as indicated by a lower mean score in this skill (Mean = 2.82).

Table 4.7 Writing skill Challenges of researchers

Situations	Mean	S.D.	Meaning
24. Writing e-mails in English	3.02	1.09	Moderate
25. Writing articles, journals, proposal or academic report in English	3.28	1.05	Moderate
26. Writing research paper review/ comment and editing	3.17	1.09	Moderate
27. Writing meeting program or schedule in English	2.98	1.16	Moderate
28. Writing official letters for invitation	3.15	1.30	Moderate
29. Writing work instruction or analytical procedure in English	2.95	1.21	Moderate

Table 4.7 Writing skill Challenges of researchers (Cont.)

Situations	Mean	S.D.	Meaning
30. Writing a handbook or book in English	3.08	1.29	Moderate
Total	3.09	1.17	Moderate

According to the findings present in Table 4.7, the average score for writing challenges was 3.09, indicating that participants perceived a moderate level of difficulty in this skill. Notably, the sub-skill deemed most challenging by participants was writing articles, journals, proposal or academic report in English (Mean = 3.28), followed closely by writing research paper review/ comment and editing (Mean = 3.17), as well as writing official letters for invitation (Mean = 3.15). Conversely, writing work instructions or analytical procedures in English received the lowest score (Mean = 2.95).

4.3 Professional needs in English language used at workplace

In this section, the analysis of professional English language needs in the workplace is presented. Respondents were asked to rate their level of English language needs in listening, speaking, reading, and writing using a Likert scale with five choices: ranging from 'very high' to 'very low'. In subsequent discussions and tables, responses categorized as 'very low' and 'low' were grouped as 'low needed', while those reported as 'high' and 'very high' were considered 'high needed'. Responses categorized as 'moderate' remained as 'moderate needed'.

Table 4.8 Summary of Professional needs in English Language used in the Workplace across All Four Skills

Skill	Mean	S.D.	Meaning
Listening	3.48	1.18	High
Speaking	3.28	1.26	Moderate
Reading	3.70	1.17	High
Writing	3.38	1.27	Moderate
Total	3.46	1.22	Moderate

From the overall summary of the professional needs in using the English language among researchers, it was found that respondents indicated a high professional need for reading skills (Mean = 3.70) and listening skills (Mean = 3.48) based on questionnaire responses. Meanwhile, speaking skills (Mean = 3.28) and writing skills (Mean = 3.38) were considered to be at a moderate level of professional demand.

Table 4.9 Professional needs for participants' listening skills in each situation

Situations	Mean	S.D.	Meaning
1. Listening to English conversation with foreigners	3.51	1.06	High
2. Listening to English conversations on the telephone	3.00	1.19	Moderate
3. Listening to the English presentations in academic or international meeting	3.77	1.12	High
4. Listening to English-language question and answer at academic or international meetings	3.72	1.16	High
5. Listening to academic English speech in conferences	3.32	1.24	Moderate
6. Listening to suggestions in English	3.56	1.25	High
7. Listening and comprehending information from English lecture class	3.75	1.15	High
8. Listening to tape recording for international meetings/ proceeding	3.25	1.25	Moderate
Total	3.48	1.18	High

According to the needs of English listening skills of the participants, the data in Table 4.9 illustrates that listening skill was rated as 'High' level (Mean = 3.48). Among the highest needs of all aspects, the highest mean fell on listening to the English presentations in academic or international meeting (Mean = 4.60), followed by listening and comprehending information from English lecture class (Mean = 3.75), and listening to English-language question and answer at academic or international meetings (Mean = 3.72). There are three aspects out of eight that were rated as moderate. Those aspects were listening to academic English speech in conferences (Mean = 3.32), followed by listening to tape recording for international meetings/ proceeding (mean = 3.25), and listening to English conversations on the telephone (Mean = 3.00).

Table 4.10 Professional needs for participants' speaking skills in each situation

Situations	Mean	S.D.	Meaning
9. Making conversation with foreigners	3.51	1.15	High
10. Speaking on the telephone with foreigners	2.96	1.21	Moderate
11. Greeting and welcoming foreigners	3.38	1.21	Moderate
12. Making an English-language discussions at academic or international meetings	3.35	1.32	Moderate
13. Oral presentation on research project proposals in English	3.38	1.31	Moderate
14. Reporting on the projects in English language	3.38	1.29	Moderate
15. Making a speech in English	2.77	1.18	Moderate
16. Giving advice or suggestions in English	3.33	1.30	Moderate
17. Making questions and answers in English in academic conferences	3.47	1.34	High
Total	3.28	1.26	Moderate

According to Table 4.10, the overall mean score for the necessity of using English speaking skills was assessed as 'Moderate' (Mean = 3.28). Among the nine aspects evaluated, two were rated as 'High' level. These included making conversation with foreigners (mean = 3.51), followed by making questions and answers in English in academic conferences (mean = 3.47). Conversely, the least required aspect of this skill was making a speech in English (Mean = 2.77).

Table 4.11 Professional needs for participants' reading skills in each situation

Situations	Mean	S.D.	Meaning
18. Reading letters or e-mails in English	3.92	1.05	High
19. Reading articles, journals, or academic research papers in English	4.22	0.98	Very High
20. Reading English documents in academic or international meeting	3.93	1.20	High
21. Reading English newspaper/ leaflet/ announcement	3.47	1.09	High
22. Reading contracts and legal documents in English	3.12	1.35	Moderate

Table 4.11 Professional needs for participants' reading skills in each situation (Cont.)

Situations	Mean	S.D.	Meaning
23. Reading the criteria for research grant applications	3.53	1.34	High
Total	3.70	1.17	High

Table 4.11, the total mean score for the needs of reading skills was assessed as 'high' (total mean = 3.70). Among the six aspects evaluated, four were identified as 'high' level needs. Participants rated the need for reading articles, journals, or academic research papers in English as 'very high' (mean = 4.80). On the other hand, reading contracts and legal documents in English was rated at a 'moderate' level (Mean = 3.12).

Table 4.12 Professional needs for participants' writing skills in each situation skill

Situations	Mean	S.D.	Meaning
24. Writing e-mails in English	3.60	1.26	High
25. Writing articles, journals, proposal or academic report in English	3.81	1.21	High
26. Writing research paper review/ comment and editing	3.57	1.23	High
27. Writing meeting program or schedule in English	3.26	1.31	Moderate
28. Writing official letters for invitation	3.10	1.23	Moderate
29. Writing work instruction or analytical procedure in English	3.32	1.27	Moderate
30. Writing a handbook or book in English	3.03	1.39	Moderate
Total	3.38	1.27	Moderate

In terms of English writing skills, as presents in Table 4.12, the total mean score revealed that the participants measured the needs of writing as 'moderate' (Mean = 3.38). Among seven aspects of the needs in reading, three of them were revealed as 'high' level. The first rank of needs in English writing were writing articles, journals, proposal or academic report in English (mean = 3.81), followed by writing e-mails in English (mean = 3.60), and writing research paper review/ comment and editing (Mean = 3.57).

4.4 Opinion toward needs of Academic English language training course for researchers at TISTR

This section comprised six questions directed at gauging participants' preferences regarding English training courses. These inquiries sought to determine participants' reasons for enrolling in such courses, the particular skills they sought to improve, their preferences regarding the duration and frequency of the training sessions, their availability for attending the training, and their preferences regarding the type of English teacher. The structure of these questions aimed to extract comprehensive insights into participants' perspectives and needs regarding effective English language instruction.

Table 4.13 Participants' preferences regarding English training courses

Subjects	Choices	Frequency	Percentage (%)
1. Participants' desire for English training courses	Yes	71	88.75
	No	9	11.25
	Total	80	100
2. The specific skills they aim to enhance through the training	Listening	7	9.86
	Speaking	32	45.07
	Reading	1	1.40
	Writing	31	43.67
Total		71	100
3. The preferred duration of the training course	Office hours (in the afternoon)	46	64.79
	After office hour (in the evening)	17	23.94
	Weekend (Sat-Sun)	6	8.45
	Other	2	2.82
Total		71	100

Table 4.13 Participants' preferences regarding English training courses (Cont.)

Subjects	Choices	Frequency	Percentage (%)
4. The frequency at which they intend to attend the English training course	Once a week	37	52.11
	Twice a week	23	32.40
	Three times a week	11	15.49
	Other	-	-
	Total	71	100
5. The preferred timing for attending the English training course	1 hour	23	32.40
	2 hours	43	60.56
	3 hours	5	7.04
	Other	-	-
	Total	71	100
6. The type of English teacher preferred by the participants	Native English teachers	21	29.58
	Thai teachers	-	-
	Both	50	70.42
	Total	71	100

In this segment, the result from Table 4.13 indicates the preferences of researchers regarding the training course. Out of 80 surveyed individuals, 71 expressed a preference for enrolling in an English language training program, comprising 88.75% of the sample. The findings illustrated their desire to enhance English skills, particularly in speaking (45.07%) and writing (43.67%), with smaller proportions seeking improvement in listening (9.86%) and reading (1.40%).

Regarding the preferred duration of the training course, the majority of the population expressed a preference for studying during office hours (in the afternoon) (64.79%), followed by after-office hours (in the evening) (23.94%), weekends (Sat-Sun) (8.45%), and other suggestion (2.82%).

In terms of the frequency and timing of attending the English training course, fifty percent of the participants expressed a desire to study once a week (52.11%), with smaller proportions opting for twice a week (32.40%) and three times a week (15.49%). As for

the preferred timing, the majority preferred a duration of 2 hours per session (60.56%), followed by 1 hour per session (32.40%), and three hours per session (7.04%).

Additionally, the majority, consisting of 50 individuals, indicated a preference for English instruction delivered by both native English and Thai teachers (70.42%), whereas only 21 individuals (29.58%) expressed a desire to be taught solely by native English teachers.

4.5 The Results from Semi-structured Interview

The qualitative research findings obtained from semi-structured interviews were utilized to complement the questionnaire data and provide detailed insights into addressing research questions 1-3. The study encompassed 19 participants distributed across three distinct groups. The first group comprised individuals from the Human Resource Management Division and the International Relations Division at TISTR, who are actively involved in collaborating with researchers. The second group included two senior researchers and nine researchers working across four centers within the R&D Group for Bio-Industries. The third group consisted of four directors from the R&D Group for Bio-Industries, alongside the directors of the International Relations Division and the Human Resource Development Division at TISTR. The data obtained from 19 interviews conducted with participating interviewees underwent analysis using Lichtman's (2013) Three Cs Analysis Technique. The subsequent table illustrates the count of codes, categories, and concepts derived from the analysis.

4.5.1 The situations in English language used for researchers in using English at the workplace.

The findings of this sections aim to answer the first research question: What are the situations in English language used for researchers in using English at the workplace? The results of the study obtained from the officer of the International Relations Division, who was a senior officer responsible for coordinating with researchers in facilitating international collaborations and the officer of the Human Resource Management Division, whose responsibilities included overseeing the promotion examinations for researchers and staff within the organization.

According to the interviews with the officer of the International Relations Division and the officer of Human Resource Management Division the findings found that researchers in the R&D Group for Bio-Industries, TISTR utilized all four skills in their work, which were segmented according to each situation as demonstrated in the table.

Table 4.14 The number of Codes, Categories, and Concepts of situations in English language used for researchers at TISTR

Phase	Officers	Number of Codes	Number of Categories	Number of Concepts
1	International Relations	29	8	4
	Human Resource	17	1	2
Total		46	9	6

Table 4.14 presents six concepts, which can be consolidated into four concepts: 1) Listening, 2) Speaking, 3) Reading, and 4) Writing skills. The analysis of the interview data on the situations in English language used for researchers at workplace is structured around three elements: codes, categories, and concepts. are in three Cs as follow:

Table 4.15 The Code-Category-Concept Analysis of situations in English language used for researchers at TISTR

Codes	Categories	Concepts
Listen to academic in conferences (2) Listen to meeting in a conference room or via the online Zoom system (1)	Listening in the conference and seminar (3)	Listening skill
Presentation (2) PowerPoint presentation in the conference or seminar (1) Oral presentations (1) Poster presentations (1)	Presenting for academic work (9) Discussion in the conference (2) Conversation and collaboration (5)	Speaking skill

Table 4.15 The Code-Category-Concept Analysis of situations in English language used for researchers at TISTR (Cont.)

Codes	Categories	Concepts
Discussion (2) Speaking (1) Presenting (1) Giving presentations (1) International collaboration (1) presentations on international stages (1) building networks (1) Conversation (1) Approach partners in different countries (1) Presenting their project proposal (1)		
Reading emails (1) Reading research papers (3) Reading the concepts for research funding (1) Reading article to summary (2)	Reading for research work (6) Reading for research funding (1)	Reading skill
Writing academic work (1) Writing article (1) Writing research paper (1) Proposal writing (2) Seeking funding (1) Translating (2) Writing essays in response to questions (1) Writing description within those topics (1) Writing their research interests (1) Writing their work history (1) Essay writing (1)	Academic writing (17) Writing for research funding (3)	Writing skill

Table 4.15 The Code-Category-Concept Analysis of situations in English language used for researchers at TISTR (Cont.)

Codes	Categories	Concepts
Writing (2) Writing topics related to their work (1) Writing perspectives on the organization (1) Writing on the topics (1) Translation from Thai to English (1) Translation from English to Thai (1)		

Table 4.15 showed that the situations in English language used for researchers at TISTR are listening in the conference and seminar, presenting for academic work, discussion in the conference, conversation and collaboration, reading for research work, reading for research funding, academic writing, writing for research funding, and writing for promotion. According to the interviews with the officer of the International Relations Division and the officer of Human Resource Management Division the findings found that researchers in the R&D Group for Bio-Industries, TISTR utilized all four skills in their work, which were segmented according to each situation as demonstrated in the table above. Listed below, are example interview excerpts from two officers:

“There are several situations, such as presenting work, which involves delivering PowerPoint presentations at meetings or conferences, both in-person and online via platforms like Zoom. These presentations could be in the form of oral presentations or poster presentations presented at poster sessions.”

“Writing also plays a crucial role because researchers need to produce academic work such as articles and research papers, depending on each individual's Key Performance Indicators (KPIs) regarding academic publication. However, if I understand correctly, for academic papers published abroad, it may require experienced researchers or scholars. I'm not sure; it might be necessary for researcher or senior

researcher. Additionally, there's listening, which often accompanies speaking, presenting, or discussing research findings."

"It's essential because in receiving emails like this, they have to read it, or even in research work, there needs to be reading of research papers from abroad."

Officer 1

"Mostly, it's about translating English into Thai and vice versa. Also, writing essays in response to questions."

"We have exams where we provide topics, and then they write essays on the specified topics. For example, it could be about research interests or recounting work experiences, all in English. Then they might have to write articles or summaries, which could be like a research paper, around 5 to 6 pages long. We ask them to summarize it into about half."

Officer 2

4.5.2 Professional needs in English language used at workplace for researchers in TISTR

The semi-structured interviews were conducted to explore the professional English language needs used in the workplace among researchers at TISTR, with the aim of gaining a comprehensive understanding of their needs. The data from eight researchers and two senior researchers from the participant interviewees were analyzed based on Litchman's (2013) Three Cs Analysis Technique. The subsequent table illustrates the count of codes, categories, and concepts derived from the analysis.

Table 4.16 The number of Codes, Categories, and Concepts of professional needs in English language used at workplace for researchers in TISTR

Phrase	Officers	Number of Codes	Number of Categories	Number of Concepts
2	Researcher 1	23	9	4
	Researcher 2	26	10	4
	Researcher 3	10	5	4
	Researcher 4	12	6	4
	Researcher 5	8	4	4
	Researcher 6	9	5	4
	Researcher 7	11	5	3
	Researcher 8	17	9	4
	Researcher 9	12	5	4
	Senior Researcher 1	9	5	4
	Senior Researcher 2	16	5	4
Total		153	68	43

Table 4.16 presents a compilation of 68 concepts that can be categorized into four main areas: 1) Listening, 2) Speaking, 3) Reading, and 4) Writing skills. The analysis of sub-skills pertaining to the professional requirements of English language usage in the workplace is structured around three elements: codes, categories, and concepts, often referred to as the three Cs as followed:

Table 4.17 The Code-Category-Concept Analysis of the professional needs

Codes	Categories	Concepts
<u>Listening to English conversation with foreigners</u> Listening to foreign guests who come to visit our workplace (3)	Listening to English conversation with foreigners (3)	Listening skill

Table 4.17 The Code-Category-Concept Analysis of the professional needs (Cont.)

Codes	Categories	Concepts
<u>Listening to the questions in conferences</u> Listening and understanding for questions (4) Listening and understanding for grasp the main idea (1) <u>Listening in the conferences and meetings</u> Listening in the conferences (10) Listening to lectures (1) Listening in work context (3) Listening and understanding (1) Listening to project meeting via Zoom (1) <u>Listening on the telephone</u> Listening conversation through telephone(1)	Listening to the questions in conferences (5) Listening in the conferences and meetings (16) Listening on the telephone (1)	
<u>Greeting and welcoming foreigners who come to visit the workplace</u> Welcoming foreign guests come to visit our workplace (4) Communicate with foreign guests (1) <u>Presenting at the conferences and meetings</u> Presenting our work (22) Pitching projects (2) <u>Explaining and answering research work</u> Answering questions (3) Explaining our work (2)	Greeting and welcoming foreigners who come to visit the workplace (5) Presenting at the conferences and meetings (24) Explaining and answering research work (5) Presenting and introducing the organization to	Speaking skill

Table 4.17 The Code-Category-Concept Analysis of the professional needs (Cont.)

Codes	Categories	Concepts
<u>Presenting and introducing the organization to foreign researchers</u> Introduce our organization (2) <u>Communication and collaboration</u> Communicate with foreign researchers (16) Exchanging knowledge with foreign researchers (2) Discussing and developing for presentations (1) Discussing with foreign researchers (1)	Presenting and introducing the organization to foreign researchers (2) Communication and collaboration (20)	
<u>Reading academic work for references</u> Reading for references (7) Reading papers for references (3) Reading article (1) <u>Reading for collaboration</u> Reading emails (2) <u>Reading academic work</u> Reading paper (5)	Reading academic work for references (11) Reading for collaboration (2) Reading academic work (5)	Reading skill
<u>Writing for research work</u> Writing research projects (10) Writing the abstract (6) Writing for publication (17) Writing Memorandums of Understanding (MOUs) (2) Writing for manuscript (2)	Writing for research work (37) Writing for coordinate with foreign researchers (10) Writing for research funding (6) Writing in conferences (1)	Writing skill

Table 4.17 The Code-Category-Concept Analysis of the professional needs (Cont.)

Codes	Categories	Concepts
<u>Writing for coordinate with foreign researchers</u> Writing emails (6) Writing through chat (4)		
<u>Writing for research funding</u> Writing proposals (6)		
<u>Writing in conferences</u> Writing opening speeches at conferences (1)		

Table 4.17 shows that the professional needs in English language used for researchers at TISTR are divided to four skills.

1) Listening is subdivided into four sub-skills, namely: listening to English conversation with foreigners, listening to the questions in conferences, listening in the conferences and meetings, and listening on the telephone.

2) Speaking is segmented into five sub-skills, including: greeting and welcoming foreigners who come to visit the workplace, presenting at the conferences and meetings, explaining and answering research work, presenting and introducing the organization to foreign researchers, and communication and collaboration.

3) Reading is divided to three sub-skills as followed: reading academic work for references, reading for collaboration, and reading academic work.

4) Writing is divided to four sub-skills as followed: writing for research work, writing for coordinate with foreign researchers, writing for research funding, and writing in conferences.

Presented below are example interview excerpts from researchers:

“Presentation is important because we need to explain our work for them to understand. Another important skill is listening, as when guests come to inspect our work, we need to know what they want.”

Researcher 1

“Reading is crucial, especially when writing project proposals. We need to review literature, which means we have to read English-language journals to incorporate references into our projects.”

Researcher 2

“Indeed, for researchers, writing is crucial. In reality, every aspect is important, but writing is paramount because it's the means through which we present our work to the academic community via scholarly articles.”

Researcher 3

“Is it the most necessary skill in terms of research work? Well, the job itself is quite diverse. But if it's in the context of research, I think currently it would be reading. There's a lot of reading involved.”

Researcher 4

“Reading is the most essential. Listening is also necessary. Regarding speaking, if we don't have to discuss with others, we might not need it, but if we can speak and communicate well, it's okay. It enables us to exchange knowledge more effectively.”

Researcher 5

“For me the most important skill are speaking and reading, these two are probably the most important. I think it's necessary because I'm not good at speaking. But reading, we usually have to use it. Because most research work is in English.”

Researcher 6

“In terms of the work I'm currently doing, writing is probably the most important skill. Additionally, speaking is also crucial because I often communicate with people from different countries. Actually, all skills are important. If you're good at writing but can't speak, you can't communicate effectively. And you also need to listen and understand.”

Researcher 7

“I think reading and writing are more important because they are formal and academic skills. They are essential for communication, especially in a government agency like ours where communication tends to be formal. Therefore, these skills are crucial for both academic purposes and official communication.”

Researcher 8

“If it's about working at TISTR, I think it's more about reading and writing, because I might not speak much. So, it would be about reading and writing.”

Researcher 9

“It's considered important for speaking and conversing more than anything else, because there needs to be coordination or conversations with researchers from other countries.”

Senior Researcher 1

“Actually, speaking skills are equally important and used frequently, ranging from researchers to senior researchers. However, speaking is more prominent in cases involving MOUs with foreign entities or participating in international conferences.”

Senior Researcher 2

4.5.3 Opinions regarding activities to meet challenges of English language used at the workplace for researchers in TISTR

This research utilized semi-structured interviews to delve deeply into the perspectives of directors from various centers. The objective was to address the third research question: What are the activities to meet challenges of English language used at the workplace for researchers in TISTR? Insights were drawn from semi-structured interviews conducted with four directors from the R&D Group for Bio-Industries, and two directors of the International Relations Division, and the director of Human Resource Development Division at TISTR. The interview data was analyzed based on Litchman's (2013) Three Cs Analysis Technique. The subsequent table illustrates the count of codes, categories, and concepts derived from the analysis.

Table 4.18 The number of Codes, Categories, and Concepts of opinion regarding activities to meet challenges of English language used at the workplace for researchers in TISTR

Phrase	Officers	Number of Codes	Number of Categories	Number of Concepts
3	The director 1	5	5	5
	The director 2	6	5	5
	The director 3	5	5	4
	The director 4	-	-	-
	The director 5	-	-	-
	The director 6	6	5	4
Total		22	20	18

Table 4.18 presents a compilation of 18 concepts that can be categorized into five main areas: 1) Developing skill, 2) Training format, 3) Duration, 4) Timing for training, and 5) The type of instructor. The opinions, and recommendations regarding the training and development of researchers is structured around three elements: codes, categories, and concepts, often referred to as the three Cs as follows:

Table 4.19 The Code-Category-Concept Analysis of opinion regarding activities to meet challenges of English language used at workplace for researchers in TISTR

Codes	Categories	Concepts
<u>All four skills</u> Training sessions for all four language skills (1) All four English language skills (1) Laying the groundwork on English language structure (1) <u>Communication skills</u> listening and speaking (2) training in speaking and (1) training for presenting work (1) <u>Writing skill</u> writing is necessary (1)	All four skills (3) Communication skills (4) Writing Skill (1)	Developing skill
<u>Hybrid approach</u> Online and onsite (1) Both online and onsite (1) <u>Online</u> Online training format (1)	Hybrid approach (2) Online (1)	Training format
<u>Once a week</u> Once a week (3) <u>1 – 2 times a week</u> once or twice a week (1)	Once a week (3) 1 – 2 times a week (1)	Duration
<u>1 hour</u> Study for about an hour (2) No more than one hour (1)	1 hour (3)	Timing for training

Table 4.19 The Code-Category-Concept Analysis of opinions regarding activities to meet challenges of English language used at workplace for researchers in TISTR (Cont.)

Codes	Categories	Concepts
<u>Both Thai and foreign</u> Could be either a foreign teacher or a Thai teacher (1) The instructor, whether they are Thai or foreign (1) Either Thai or foreign instructors (1) Foreign instructors for presentation practice and Thai instructors for teaching writing (1)	Both Thai and foreign (4)	The type of instructor

Table 4.19 shows the opinions, and recommendations regarding the training and development of researchers. The majority of the directors recommended comprehensive training covering all four skills, with a particular emphasis on communication and writing skills. They proposed a hybrid training format, combining online and onsite sessions. Regarding the duration and schedule, most agreed that once a week and one hour would be appropriate for researchers. Additionally, there was consensus that instructors could be either foreign or Thai. These findings were supported by the interviews, as evidenced in the following excerpt.

“There should be training sessions for all four language skills because they are necessary for employees, not just researchers, but also staff in academic fields. Regarding the format of training sessions, I believe a hybrid approach would be suitable. This allows flexibility for learning anytime, anywhere, but on-site learning is also necessary to foster interaction between learners and instructors. As for the duration and frequency of each session, I think once a week for about an hour is just right. It's appropriate because if someone finishes work and then has to study for several hours, it might be too much for

them. So, I believe keeping it to no more than an hour per session is ideal. Regarding who will teach, it could be either a foreign teacher or a Thai teacher, depending on what the learners want to study.”

Director 1

“What's really necessary is listening and speaking, reading and writing still have time for practice. As for the timing of the training, if you ask the instructor, they probably have time after work. Even the learners themselves would probably prefer not to disturb anyone's work hours. As for the duration of the training, I think once a week is good, but two hours per session might be too much. Even the learners themselves might not be able to handle more than an hour. As for the instructor, whether they are Thai or foreign, it's fine either way. Actually, in the beginning, a Thai instructor might be better because if we encounter any difficulties, we can ask them. Foreign instructors might be at an intermediate level. The online training format is good, especially during the time after work, so, it should be something like this.”

Director 2

“I agree that training in all four English language skills is necessary for all work aspects. It should start with laying the groundwork on English language structure. I agree that one hour is suitable. Learning once or twice a week is also fine. These skills depend on consistency and frequent use. If learned but not utilized, they are not beneficial. Regarding instructors, there are competent English language staff within the organization. They could take turns teaching or, for speaking practice, foreigners could be brought in to encourage interaction and familiarity. So, it could be either Thai or foreign instructors.”

Director 3

“I agree that training in speaking and writing is necessary because while reading and listening can be self-taught, writing requires someone to check it, especially for grammar-related issues. As for speaking, it needs someone to practice with. Regarding the time frame, once a week seems fine to avoid disrupting work schedules and having

both online and onsite learning options would be convenient. Focusing on training for presenting work could also be beneficial. In terms of speaking, it might be beneficial to have foreign instructors to help with teaching because they can also provide presentation practice. As for writing, having Thai instructors might be better understood since there are many details involved.”

Director 6

In summary, examination of the semi-structured interviews with researchers confirmed the situation of English language used, professional needs, and opinion regarding activities to meet challenges related to English language usage in the workplace at TISTR. The ensuing diagram (Figure 4) illustrates the themes identified during the analysis, categorized according to the three Cs and three phrases.

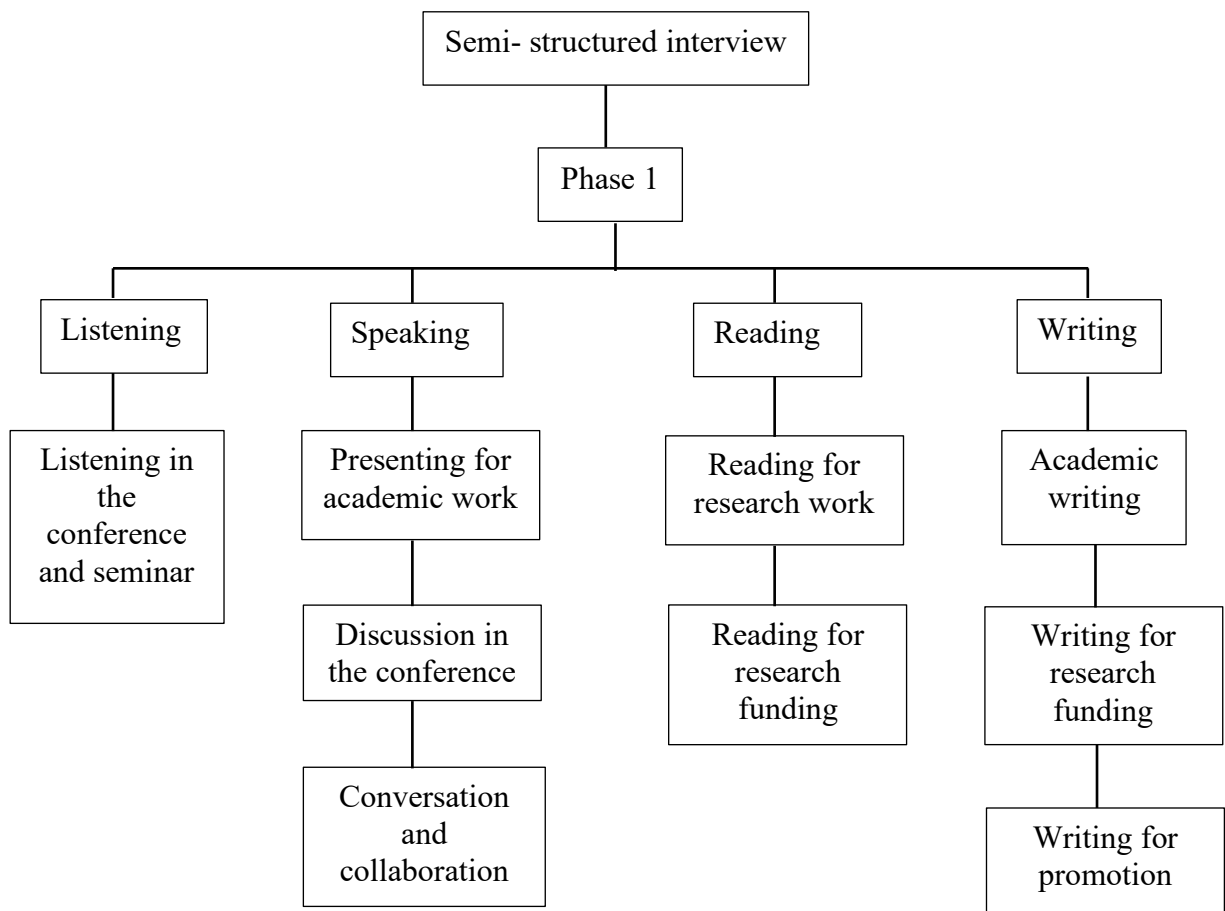


Figure 5 Semi-structured Interview Phase 1

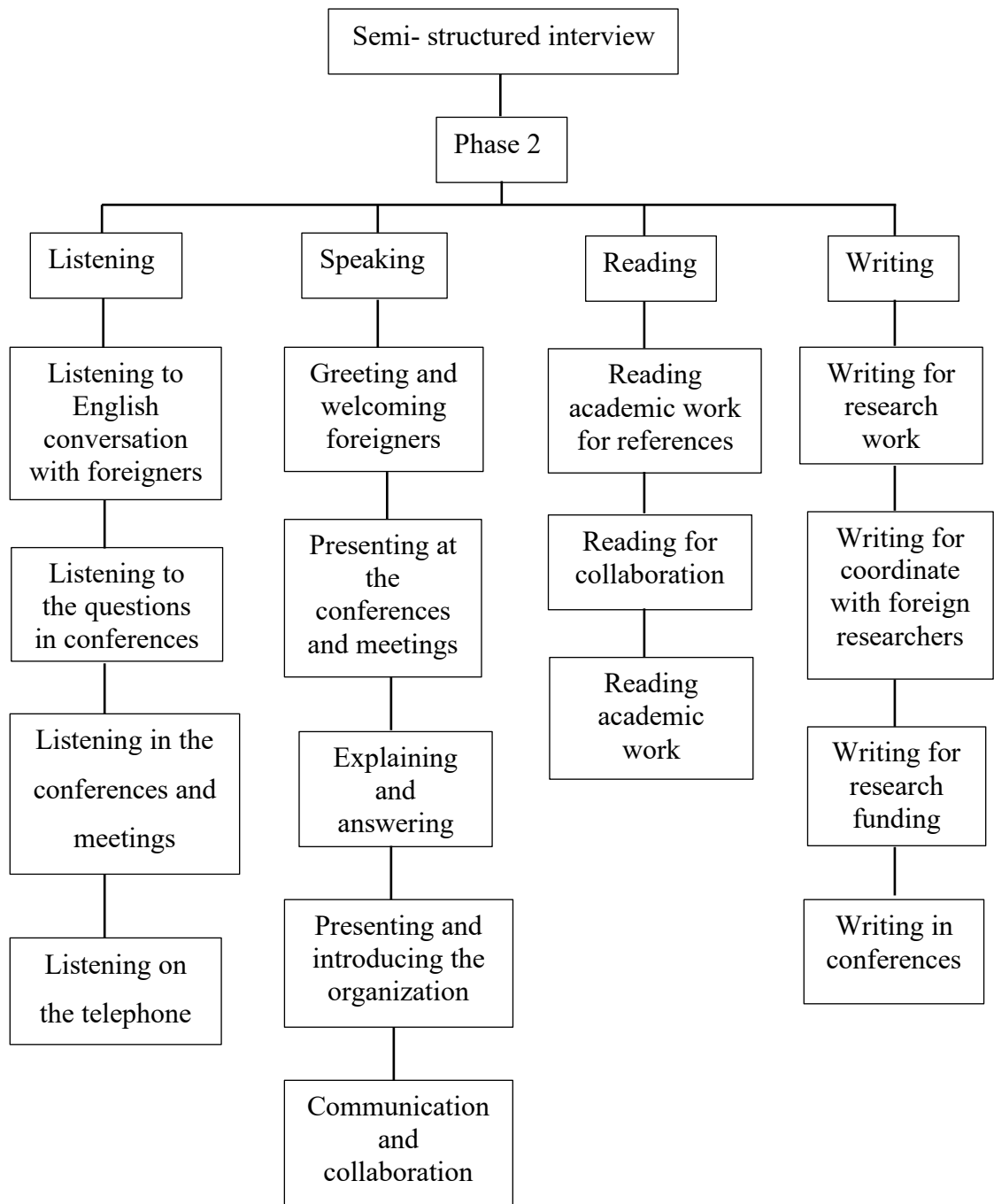


Figure 6 Semi-structured Interview Phase 2

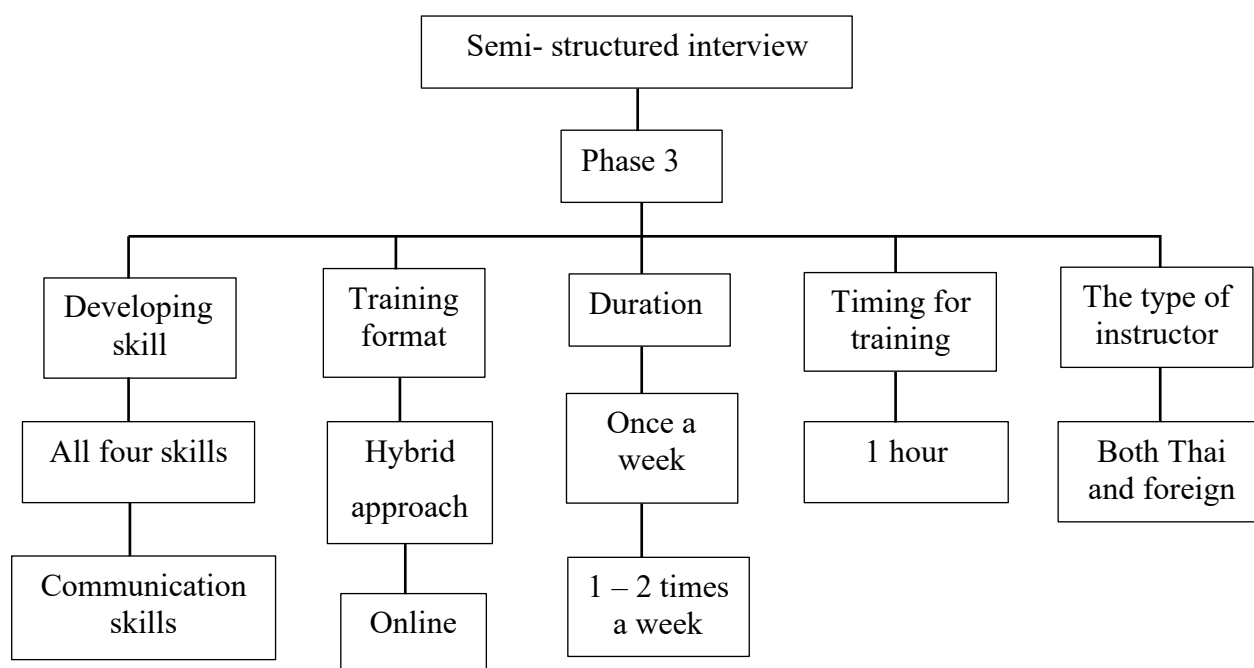


Figure 7 Semi-structured Interview Phase 3

4.6 Chapter summary

In conclusion, results from data collected from the three groups were interrelated. The majority of the sample group perceived researchers needed to utilize all language skills, but the most crucial skills were reading and listening, especially for reading research papers and listening during international conferences. Regarding the challenges in using English, both the majority of the participants and the directors concurred that they perceived themselves to face moderate challenges in using English due to various factors such as educational level or certain work situations where researchers did not necessarily need to use English, leading them not to perceive it as an obstacle or challenge.

Furthermore, regarding the opinions on English language training, the respondents in the survey overwhelmingly expressed a desire for training in both speaking and writing skills. As for the directors who preferred for training in all four skills, they suggested conducting in-depth assessments of individual skill development needs. The summarized details are all presented in Figure 8.

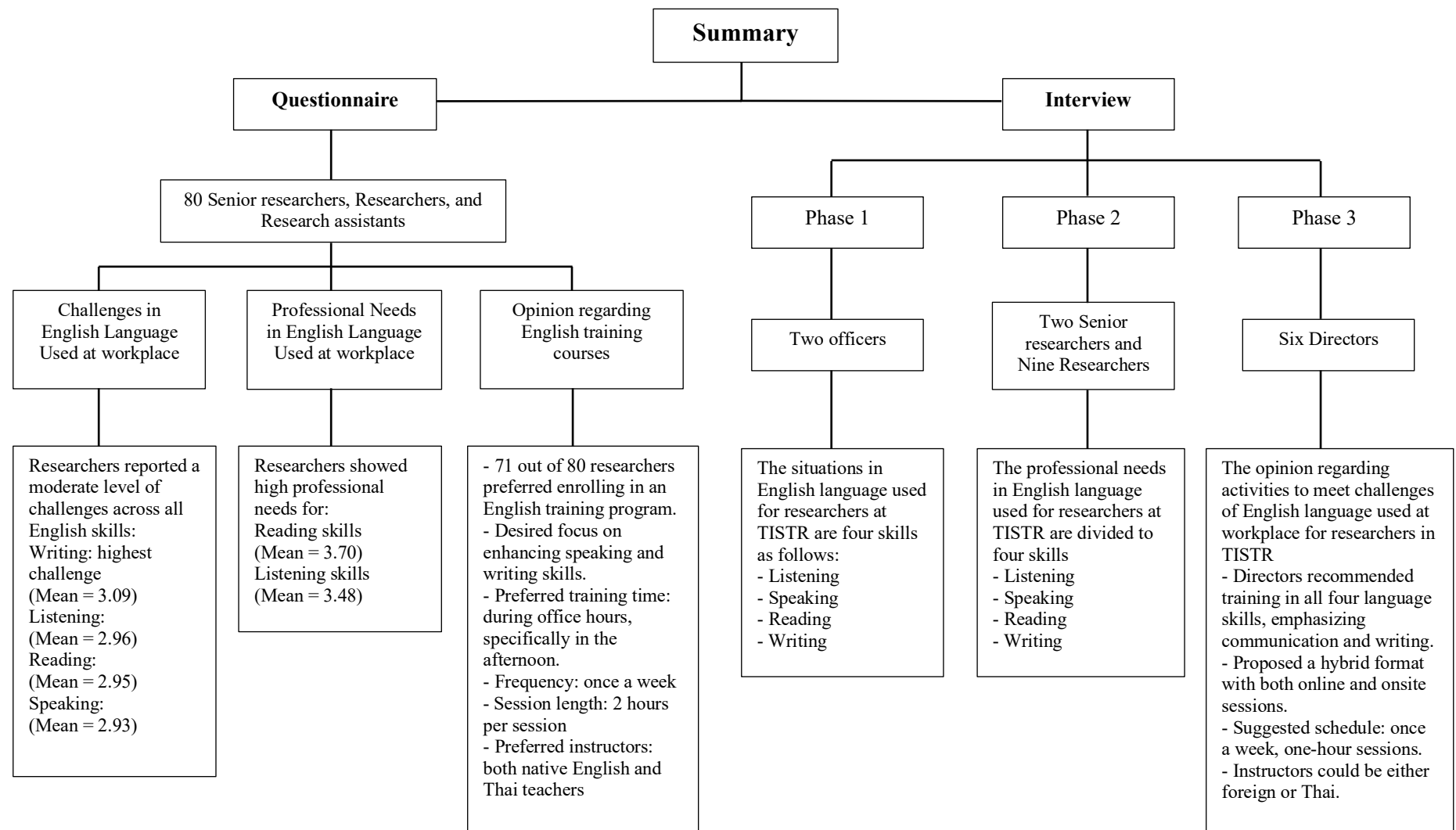


Figure 8 Summary of Results from Questionnaire and Interviews

CHAPTER 5

DISCUSSION AND RECOMMENDATIONS

This chapter concludes of the analysis the situations in English language used, the professional needs for researchers in using English at the workplace, and opinions regarding activities to meet the challenges of English language use at the workplace for researchers in the R&D Group for Bio-Industries, TISTR. The chapter consisted of three sections followed by a conclusion of the findings, discussion, recommendations for further studies. The study offered guidelines for the Human Resource Management Division to improve the current English course and establish future English courses for researchers at TISTR.

The section discussed the answer to the research question:

1. What are the situations in the English language used at the workplace
of researchers in TISTR?
2. What are the professional needs in English language used at the workplace for researchers in TISTR?
3. What are the guidelines for professional development of English language used at the workplace for researchers in TISTR?

5.1 Conclusion

5.1.1 Responses to Research Question 1

What are the situations in the English language used at the workplace of researchers in TISTR?

The data analysis form the interviews with the officer of the International Relations Division and the officer of Human Resource Management Division the findings found that researchers in the R&D Group for Bio-Industries, TISTR utilized all four skills in their work, which were segmented according to each situation: listening in the conference and seminar, presenting for academic work, discussion in the conference, conversation and collaboration, reading for research work, reading for research funding,

academic writing, writing for research funding, and writing for promotion. Therefore, the summarized results from the interviews were used to design a questionnaire to inquire about the challenges in using English language and the professional needs of researchers. The situations were categorized into four skills: listening, speaking, reading, and writing. An example of the questionnaire can be found in Appendices 1.1.

5.1.2 Responses to Research Question 2

What are the professional needs in English language used at the workplace for researchers in TISTR?

The questionnaire data collected from 80 Senior researchers, Researchers, and Assistant research officers from Research and Development Group for Bio-Industries, TISTR showed that the essential skills for researchers in their work are reading (Mean = 3.70) and listening skills (Mean = 3.48). Regarding the sub-skills within the four identified skills that researchers rated as most necessary, they are as follows: reading articles, journals, or academic research papers in English (Mean = 4.22), writing articles, journals, proposal or academic report in English (Mean = 3.81), listening to the English presentations in academic or international meeting (Mean = 3.77), and making conversation with foreigners (Mean = 3.51), respectively.

Additionally, the analysis of data from semi-structured interviews involving nine researchers and two senior researchers affirmed the necessity of all four skills. The analysis findings demonstrated the crucial professional requirements in English language utilization within the workplace as perceived by researchers, encompassing the following scenarios: 1) Listening is divided to four sub-skills as followed: listening to English conversation with foreigners, listening to the questions in conferences, listening in the conferences and meetings, and listening on the telephone. 2) Speaking is divided to five sub-skills as followed: presenting at the conferences and meetings, explaining and answering research work, presenting and introducing the organization to foreign researchers, and communication and collaboration. 3) Reading is divided to three sub-skills as followed: reading academic work for references, reading for collaboration, and

reading academic work. 4) Writing is divided to four sub-skills as followed: writing for research work, writing for coordinate with foreign researchers, writing for research funding, and writing in conferences.

5.1.3 Responses to Research Question 3

What are the guidelines for professional development of English language used at the workplace for researchers in TISTR?

The findings from the responses gathered through 80 questionnaires assessing the challenges faced by researchers in using English suggest that all four skills are perceived to present a moderate level of difficulty. Writing skill emerged as the most challenging among the four (Mean = 3.09), followed by listening (Mean = 2.96), reading (Mean = 2.95), and speaking (Mean = 2.93) skills, respectively. Regarding the sub-skills within the four identified skills that researchers rated as most challenges are as follows: writing articles, journals, proposal or academic report in English (Mean = 3.28), listening to English-language question and answer at academic or international meetings (Mean = 3.11) reading articles, journals, or academic research papers in English (Mean = 3.06), and making an English-language discussions at academic or international meetings (Mean = 3.02).

In terms of the possible solutions to meet the challenges of English language used at workplace. The questionnaire responses gathered from 80 participants revealed that 71 of them indicated a preference for joining an English language training program. Among the surveyed individuals, the majority expressed a desire to improve their speaking (45.07%) and writing (43.67%) skills. The majority of respondents indicated a preference for undertaking the training course during office hours, particularly in the afternoon (64.79%). As for the frequency and timing of the sessions, around half of the participants favored attending classes once a week (52.11%), with a significant majority preferring sessions lasting 2 hours each (60.56%). Furthermore, a majority of 50 participants expressed a preference for instruction provided by both native English speakers and Thai teachers (70.42%).

Furthermore, upon analyzing the data obtained from semi-structured interviews concerning opinions and suggestions regarding the training and advancement of

researchers, four directors proposed inclusive training that encompasses all four skills, prioritizing communication and writing abilities. They suggested a hybrid training model, integrating both online and onsite components. As for the duration and timing, the majority concurred that a weekly session lasting one hour would suit researchers. Moreover, it was unanimously agreed that instructors could be either foreigners or Thai nationals.

5.2 Discussion

According to the purposes of this study, Present situation analysis was conducted to reveal the challenges and professional needs in English language used among researcher from Research and Development Group for Bio-Industries, TISTR. Duddley-Evans and John (2009) view PSA as a valuable tool for assessing learners' current proficiency in various language skills and usage. It's seen as crucial for evaluating how effectively learners can use the target language at their current level. PSA involves identifying any shortcomings in learners' language abilities comprehensively, bridging the gap between what they need to know and what they already understand, and assessing their current skills and performance, as described by Yundayani (2018). The research provides recommendations for both course designers and English instructors to enhance the existing English curriculum and develop future English courses tailored for TISTR researchers. The researcher utilized data gathered from participants and employed mixed methods to address three research questions, aiming to compare findings derived from diverse sources and methodologies.

5.2.1 Discussion on the challenges in English language used at workplace

This research aims to determine the challenges in English language used for researchers in using English at the workplace. As for the findings of this study, it found that all four skills are perceived to present a moderate level of challenges. Writing skill appeared to pose the greatest challenge among the four skills followed by listening skill), reading skill, and speaking skill. The result also showed that writing articles, journals, proposal or academic report in English was the most challenges followed by writing

research paper review/ comment and editing. These findings concur with the findings of previous studies. Maneechoetvichanat (2020) studied the needs and problems of Thai customs officers concerning English for specific purposes at the workplace. The result showed that most respondents perceived that problematic of all English skills were at a moderate level. Additionally, Koktaisong (2020) investigated problems and needs in using English Language of International Relations Officers in Rajabhat Universities. The results indicated that the overall difficulties encountered in utilizing the English language were of a moderate degree, with writing skills being identified as the most problematic skill. The finding also showed that writing notes and writing project plans were the most difficulty sub-skill. Similarly to Kaewkunha (2021) The finding showed that the overall problems in using English language was at moderate level and the finding from questionnaire and interviews showed that the most perceived lack was writing skill.

In term of challenges of writing skill, Hiranprajak (2019) investigated the problems and identify the needs of Thai specialist teachers in using English skills at the workplace. The results revealed that writing as the most problematic skill. The main problems were a lack of vocabulary and word choice, followed by English grammar, inability to compose understandable sentences, and spelling words correctly.

In contrast, previous research revealed different findings concerning English language challenges for employees at the workplace. For instance, in a study conducted by Sugarin (2020) on the challenges encountered by Thai lawyers in English language proficiency, it was revealed that speaking posed the greatest difficulty. Specifically, Thai lawyers struggled with utilizing legal English vocabulary and idiomatic expressions during verbal communication. Another study by Surakkitthikul (2020) investigated needs and problems in English development of support staff at a Thai University in Nakhon Pathom Province. The results presented that support staff in university had overall high problems for English development in listening and speaking skills.

5.2.2 Discussion on the professional needs in English language used at the workplace for researchers in TISTR

This section discusses the professional needs in English language used at the workplace for researchers in TISTR. According to the findings of this study, researchers are aware of the professional needs for English proficiency in the workplace. As for data from the questionnaire the overall English skills needs, researchers had high needs for listening and reading skills. Meanwhile, the data obtained from interviews with researchers suggests that all skills are deemed essential for professional work.

The results from this study were similar to Purnananda (2021) which investigated the needs and difficulties in using English skills of sales support in a private company in Thailand. The results indicated that proficiency in all English language skills was essential for sales support roles, with a particular emphasis on reading skills. Among these, the most crucial skill identified was reading documents containing terms and conditions. Similarly, Phuyathip (2019) research found that all four main skills were necessary for the employees working in the ‘Trade Service Section’. The finding also showed that they perceived that reading and understanding documents and information was the most necessary language situation. Additionally, the research findings of Maneechoetvichanat (2020) showed that listening was the most needed skill followed by reading and writing skill for Thai customs officers. The finding also showed that reading English customs related documents such as explanatory notes, import-export declarations, bills of lading, credit advice, or other documents related to customs and tax incentives was perceived as moderately needed to use at work. The findings are consistent with Surakkitthikul (2020) study into the needs and problems in English development of support staff at a Thai University in Nakhon Pathom Province. The result revealed that support staff in the university considered that listening and reading skills are the most necessary. Listening to general conversations or greetings with instructors and students and reading an E-mail from instructors and students rated at the most needed of each skill. In a study conducted by Kaewkunha (2021), the investigation delved into the needs, perceived lacks, and wants of English-language skills among Thai employees in the service industry. The findings revealed a notable demand for English language proficiency among the participants, with listening skills being the most desired. This preference may

stem from the frequent necessity for service providers to engage in communication with customers, as indeed, those employed in the service sector are required to attentively listen to their clients. Tonklay (2022) studied the perceived needs of English language skills among novice medical doctors from a public hospital in Surin province. The results indicated that reading was deemed the most crucial skill for their professional endeavors in medical environments. Specifically, reading academic articles on medical topics and reading medical textbooks. The outcomes of these previous studies serve to confirm that the necessity of reading skills is directly correlated with professional tasks across various fields of work.

In contrast, the results of the study are different from the findings of Hamdani, I. & Ouahmiche G. (2022). The objective of this research was to ascertain the utilization of English among hydraulics engineers, along with the requisite skills and proficiencies essential for their workplace environments. The findings highlighted the significance of all language skills, with speaking identified as the paramount skill for hydraulics engineers. Among the sub-skills, respondents emphasized the importance of oral presentations of projects, speaking with foreign workers/engineers about field-related subjects, writing projects, reports or brochures, and listening to instructions in real-world situations. The results of this study differed with findings from the interviews in which researchers indicated that all four skills are of equal importance.

5.2.3 Suggestions and other recommendations for organizing English language training courses

This segment examines the possible solutions employed to address the challenges posed by English language usage in the workplace for TISTR researchers. It explores the perceived challenges in the use of English across four skills and the desired aspects of training courses.

According to the questionnaires received from researchers, the findings revealed that the main English skills that they wanted to study on training course were speaking and writing because they perceived that these skills were particularly useful for them. Conversely, interviews conducted with directors at TISTR regarding the training and professional development of researchers suggested a comprehensive training approach

covering all four language skills, with a particular emphasis on enhancing communication and writing skills.

Both the surveys conducted among researchers and the interviews with directors indicated that the primary English skills desired for the training course encompassed speaking, listening, reading, and writing. Particularly, there was an emphasis on enhancing speaking, listening, and writing abilities. Hence, suggestions for arranging English language training sessions for TISTR researchers can be categorized into three groups:

5.2.3.1 Content

Teaching general English in the training course is deemed unsuitable and inadequate for meeting the job requirements. It is recommended that the training course focus on content relevant to participants' work to potentially increase enrollment. These are the sub skill that they want to proficient in:

1) Listening skills:

- Listening to English conversation with foreigners
- Listening to the questions in conferences
- Listening in the conferences and meetings

2) Speaking skills:

- Presenting at the conferences and meetings
- Explaining and answering research work
- Presenting and introducing the organization to foreign researchers
- Communication and collaboration with foreign researchers

3) Writing skills:

- Writing for research papers
- writing for emails, chat to coordinate with foreign researchers
- Writing for research funding

5.2.3.2 Arrangement and Timing of Training Sessions

The training should be held both online and onsite in a hybrid approach. The English training sessions are preferred to be scheduled in the afternoon, starting from 4:00. English training programs should be assessed on the English language proficiency of each individual and subsequently categorize them into distinct proficiency levels.

5.2.3.3. Instructors

The instructors should be Thai nationals proficient in academic writing and capable of meticulously reviewing language accuracy. Regarding communication instruction, foreign nationals would be preferred to facilitate correct pronunciation practice and simulated presentation scenarios for researchers.

5.3 Recommendations

This study has limitations similar to other research. Firstly, the research population is restricted to one group within the workplace, while TISTR encompasses two distinct groups engaged in research activities. This limitation arises due to constraints on time. Furthermore, the study exclusively examines the challenges and professional needs of senior researchers, researchers, and assistant research officers, representing only a single professional category within the workplace. Additionally, the research tools are questionnaires and interviews, potentially limiting the depth of data collection.

Suggestions for future research include expanding the participants and considering different locations to enhance the generalizability of findings. Moreover, future studies could investigate English language skill needs and challenges across various professions to facilitate a comparative analysis. Furthermore, employing observational methods could supplement subjective reports and offer deeper insights into internal factors, individual learning preferences, and intrinsic motivation. Additionally, a language proficiency test could help identify disparities between participants' language proficiency levels and their language requirements in real-world scenarios.

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Appendix A

QUESTIONNAIRE-ENGLISH

Professional Needs and Challenges for the Development of English language

Proficiency at a Research Institute Pathum Thani : A Situational Analysis

This questionnaire is a part of Thesis for Master of Arts in English Career Development, RMUTT

The main purpose of this research is to explore the challenges the researcher faced when they use the English language at workplace and to identify professional needs in English language used at the workplace for researchers. The findings from the questionnaire will assist the human resources department in offering English courses for researchers to enhance their English language proficiency in the workplace.

Please read the instruction carefully and fill out the answer that corresponds to you. Your answer and information will be confidential, presented as group data, not individually and used for the purpose of this research study only. Your cooperation in answer this questionnaire is greatly appreciated.

The questionnaire is divided into four parts:

Part 1: Background Information

Part 2: Challenges in English language used at workplace

Part 3: Professional needs in English language used at workplace

Part 4: Opinion toward needs of Academic English language training course for researchers at TISTR

Part 1: Background Information

Instruction: Please answer the questions below by putting a mark ✓ in the box ☐ according to your own information.

1. Gender

☐ Male ☐ Female

2. Age

☐ 25 – 30 years ☐ 31 – 35 years

☐ 36 – 40 years ☐ 41 - 45 years

☐ 45 years and above

3. Education level

☐ Bachelor's Degree ☐ Master's Degree ☐ Doctorate degree

☐ Others (Please Specify)

4. Work Experiences in TISTR

☐ 1 – 5 years ☐ 6 – 10 years ☐ 11 – 15 years

☐ 16 – 20 years ☐ More than 20 Years

5. Departments

☐ Expert Centre of Innovative Agriculture

☐ Expert Centre of Innovative Health Food

☐ Expert Centre of Innovative Herbal Products

☐ Biodiversity Research Centre

6. Current Position

☐ Senior researcher ☐ Researcher ☐ Assistant research officer

7. How often do you use English in the workplace?

Skills	5 Always	4 Most of the time	3 Sometimes	2 Rarely	1 Never
Listening Skill					
Speaking Skill					
Reading Skill					
Writing Skill					

Part 2 - 3: Challenges and professional needs in English language used at workplace

Instructions: Please mark (✓) to rate your challenges and professional needs in English language used at workplace by using the following criteria:

Scale	Level
5	Very High
4	High
3	Moderate
2	Low
1	Very low

Listening skill

Situations	Part 2: Challenges in English language used at workplace					Part 3: Professional needs in English language used at workplace				
	5	4	3	2	1	5	4	3	2	1
1. Listening to English conversation with foreigners										
2. Listening to English conversations on the telephone										

3. Listening to the English presentations in academic or international meeting										
4. Listening to English-language question and answer at academic or international meetings										
5. Listening to academic English speech in conferences										
6. Listening to suggestions in English										
7. Listening and comprehending information from English lecture class										
8. Listening to tape recording for international meetings/proceeding										

Speaking skill

Situations	Part 2: Challenges in English language used at workplace					Part 3: Professional needs in English language used at workplace				
	5	4	3	2	1	5	4	3	2	1
9. Making conversation with foreigners										
10. Speaking on the telephone with foreigners										
11. Greeting and welcoming foreigners										

12. Making an English-language discussions at academic or international meetings										
13. Oral presentation on research project proposals in English										
14. Reporting on the projects in English language										
15. Making a speech in English										
16. Giving advice or suggestions in English										
17. Making questions and answers in English in academic conferences										

Reading skill

Situations	Part 2: Challenges in English language used at workplace					Part 3: Professional needs in English language used at workplace				
	5	4	3	2	1	5	4	3	2	1
18. Reading letters or e-mails in English										
19. Reading articles, journals, or academic research papers in English										
20. Reading English documents in academic or international meeting										

21. Reading English newspaper/ leaflet/ announcement										
22. Reading contracts and legal documents in English										
23. Reading the criteria for research grant applications										

Writing skill

Situations	Part 2: Challenges in English language used at workplace					Part 3: Professional needs in English language used at workplace				
	5	4	3	2	1	5	4	3	2	1
24. Writing e-mails in English										
25. Writing articles, journals, proposal or academic report in English										
26. Writing research paper review/ comment and editing										
27. Writing meeting program or schedule in English										
28. Writing official letters for invitation										
29. Writing work instruction or analytical procedure in English										
30. Writing a handbook or book in English										

Part 4: Opinion and suggestions for arranging an English language training course for researchers at TISTR

Instruction: Please answer the questions below by putting a mark ✓ in the box according to your own information.

1. Do you want TISTR to have an English training course?
☐ Yes (continue answering the questions) ☐ No (stop answer the questions)
2. Which English skill do you want to develop the most? (Choose only one choice)
☐ Listening ☐ Speaking ☐ Reading ☐ Writing
3. What period of time do you want to attend the training?
☐ Office hours (in the afternoon) ☐ After office hour (in the evening)
☐ Weekend (Sat-Sun) ☐ Other (Please specify) _____
4. How often do you want to attend the English training course per week?
☐ Once a week ☐ Twice a week
☐ Three times a week ☐ Other (Please specify) _____
5. How long does it take to attend the English training course?
☐ 1 hour ☐ 2 hours ☐ 3 hours ☐ Other (Please specify) _____
6. What type of English teacher you prefer the most?
☐ Native English teachers
☐ Thai teachers
☐ Both
7. Are you available for an in-depth interview? (If willing, the researcher will contact you later regarding the date, time, and location for the interview).

☐ Yes, convenient, please contact on E-mail
.....
☐ No, inconvenient

Appendix B

QUESTIONNAIRE - THAI

เรื่อง **Professional Needs and Challenges for the Development of English language**

Proficiency at a Research Institute Pathum Thani : A Situational Analysis

คำอธิบาย แบบสอบถามนี้เป็นส่วนหนึ่งของวิทยานิพนธ์ในสาขาวิชาภาษาอังกฤษเพื่อการพัฒนาอาชีพ คณะศิลปศาสตร์ มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี

โดยมีวัตถุประสงค์เพื่อสอบถามความท้าทายและระบุความจำเป็นทางวิชาชีพในการใช้ภาษาอังกฤษในที่ทำงานของนักวิจัยในสถาบันวิจัยวิทยาศาสตร์และเทคโนโลยีแห่งประเทศไทย (วว.) ซึ่งข้อมูลที่ได้จะเป็นประโยชน์อย่างยิ่งต่อการออกแบบกิจกรรมเพื่อตอบสนองต่อความท้าทายในการใช้ภาษาอังกฤษในสถานที่ทำงานสำหรับนักวิจัยใน วว.

จึงขอความกรุณาท่านตอบแบบสอบถามให้ครบทุกข้อ และขอรับรองว่าข้อมูลและคำตอบของท่านจะถือเป็นความลับ การนำเสนอข้อมูลจะนำเสนอในภาพรวมและเพื่อวัตถุประสงค์ของงานวิจัยนี้เท่านั้น

ขอขอบคุณท่านที่ให้ความร่วมมือมา ณ โอกาสนี้

แบบสอบถามแบ่งออกเป็น 3 ส่วน ดังนี้

- | | |
|-----------|--|
| ส่วนที่ 1 | ข้อมูลทั่วไป |
| ส่วนที่ 2 | ความท้าทายในการใช้ภาษาอังกฤษในที่ทำงาน |
| ส่วนที่ 3 | ความจำเป็นทางวิชาชีพในการใช้ภาษาอังกฤษในที่ทำงาน |
| ส่วนที่ 4 | ความคิดเห็นต่อความต้องการหลักสูตรฝึกอบรมภาษาอังกฤษเชิงวิชาการสำหรับนักวิจัย วว |

ส่วนที่ 1 ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม

คำชี้แจง กรุณาทำเครื่องหมาย ✓ ลงในช่อง ☐ ที่ท่านเลือกหรือเขียนตอบลงในช่องว่าง

1. เพศ ☐ ชาย ☐ หญิง

2. อายุ

☐ 25 – 30 ปี ☐ 31 – 35 ปี

☐ 36 – 40 ปี ☐ 41 - 45 ปี

☐ มากกว่า 45 ปีขึ้นไป

3. ระดับการศึกษา

☐ ปริญญาตรี ☐ ปริญญาโท ☐ ปริญญาเอก

☐ อื่นๆ (โปรดระบุ)

4. ประสบการณ์การทำงานใน วว.

☐ 1 – 5 ปี ☐ 6 – 10 ปี ☐ 11 – 15 ปี

☐ 16 – 20 ปี ☐ มากกว่า 20 ปี

5. ท่านทำงานอยู่ศูนย์วิจัยใด

☐ ศูนย์เชี่ยวชาญนวัตกรรมเกษตรสร้างสรรค์

☐ ศูนย์เชี่ยวชาญนวัตกรรมอาหารสุขภาพ

☐ ศูนย์เชี่ยวชาญนวัตกรรมผลิตภัณฑ์สมุนไพร

☐ ศูนย์ความหลากหลายทางชีวภาพ

6. ตำแหน่งในปัจจุบัน

☐ นักวิจัยอาวุโส

☐ นักวิจัย

☐ นักทดลองวิทยาศาสตร์วิจัย/บริการ

7. ระดับความถี่ในการใช้ภาษาอังกฤษในที่ทำงานของท่าน

ทักษะ	5 ตลอดเวลา	4 เป็นประจำ	3 บางครั้ง	2 แทบจะไม่	1 ไม่เคย
การฟัง					
การพูด					
การอ่าน					
การเขียน					

ส่วนที่ 2 และ 3 ความท้าทายและความจำเป็นทางวิชาชีพในการใช้ภาษาอังกฤษในที่ทำงาน

คำชี้แจง กรุณาทำเครื่องหมาย (✓) ลงในช่องที่ตรงกับความคิดเห็นของท่าน

5 = มากที่สุด 4 = มาก 3 = ปานกลาง 2 = น้อย 1 = น้อยที่สุด

ทักษะการฟัง

สถานการณ์การใช้ภาษาอังกฤษ	ส่วนที่ 2 ความท้าทายในการใช้ ภาษาอังกฤษในที่ทำงาน					ส่วนที่ 3 ความจำเป็นทางวิชาชีพในการ ใช้ภาษาอังกฤษในที่ทำงาน				
	5	4	3	2	1	5	4	3	2	1
1. ฟังบทสนทนาภาษาอังกฤษกับ ชาวต่างชาติ										
2. ฟังบทสนทนาทางโทรศัพท์เป็น ภาษาอังกฤษ										
3. ฟังบทสนทนาภาษาอังกฤษใน งานประชุมทางวิชาการหรือการ ประชุมระหว่างประเทศ										
4. ฟังคำถามและคำตอบ ภาษาอังกฤษในการประชุม										

วิชาการหรือการประชุมระหว่างประเทศ										
5. ฟังสุนทรพจน์ภาษาอังกฤษเชิงวิชาการในการประชุมสัมมนา										
6. ฟังข้อเสนอแนะเป็นภาษาอังกฤษ										
7. ฟังและเข้าใจข้อมูลจากการบรรยายภาษาอังกฤษ										
8. ฟังเทปบันทึกการประชุม/การประชุมระหว่างประเทศ										

ทักษะการพูด

สถานการณ์การใช้ภาษาอังกฤษ	ส่วนที่ 2 ความท้าทายในการใช้ ภาษาอังกฤษในที่ทำงาน					ส่วนที่ 3 ความจำเป็นทางวิชาชีพในการ ใช้ภาษาอังกฤษในที่ทำงาน				
	5	4	3	2	1	5	4	3	2	1
9. พูดสนทนากับชาวต่างชาติ										
10. พูดสนทนากับชาวต่างชาติทางโทรศัพท์										
11. กล่าวทักทายและต้อนรับชาวต่างชาติ										
12. พูดอภิปรายเป็นภาษาอังกฤษในการประชุมวิชาการหรือการประชุมระหว่างประเทศ										
13. นำเสนอโครงการวิจัยหรือข้อเสนอโครงการเป็นภาษาอังกฤษ										
14. รายงานโครงการวิจัยในงานประชุมเป็นภาษาอังกฤษ										

15. กล่าวสุนทรพจน์เป็น ภาษาอังกฤษ										
16. พุฒให้คำแนะนำหรือ ข้อเสนอแนะเป็นภาษาอังกฤษ										
17. ถามคำถามหรือตอบคำถาม เป็นภาษาอังกฤษในงานประชุม วิชาการ										

ทักษะการอ่าน

สถานการณ์การใช้ภาษาอังกฤษ	ส่วนที่ 2 ความท้าทายในการใช้ ภาษาอังกฤษในที่ทำงาน					ส่วนที่ 3 ความจำเป็นทางวิชาชีพในการ ใช้ภาษาอังกฤษในที่ทำงาน				
	5	4	3	2	1	5	4	3	2	1
18. อ่านจดหมายหรืออีเมลเป็น ภาษาอังกฤษ										
19. อ่านบทความ วารสาร หรือ งานวิจัยทางวิชาการเป็น ภาษาอังกฤษ										
20. อ่านเอกสารภาษาอังกฤษใน การประชุมวิชาการหรือการ ประชุมระหว่างประเทศ										
21. อ่านหนังสือพิมพ์ ใบปลิว หรือ ประกาศเป็นภาษาอังกฤษ										
22. อ่านสัญญาและเอกสารทาง กฎหมายเป็นภาษาอังกฤษ										
23. อ่านเกณฑ์ในการสมัครขอทุน วิจัยเป็นภาษาอังกฤษ										

ทักษะการเขียน

สถานการณ์การใช้ภาษาอังกฤษ	ส่วนที่ 2 ความท้าทายในการใช้ ภาษาอังกฤษในที่ทำงาน					ส่วนที่ 3 ความจำเป็นทางวิชาชีพในการ ใช้ภาษาอังกฤษในที่ทำงาน				
	5	4	3	2	1	5	4	3	2	1
24. เขียนอีเมลเป็นภาษาอังกฤษ										
25. เขียนบทความ วารสาร ข้อเสนอโครงการ หรือรายงาน ทางวิชาการเป็นภาษาอังกฤษ										
26. เขียนบทวิจารณ์ แสดงความ คิดเห็นหรือเรียบเรียงรายงานการ วิจัยเป็นภาษาอังกฤษ										
27. เขียนแผนการประชุมหรือ กำหนดการเป็นภาษาอังกฤษ										
28. เขียนจดหมายเชิญราชการเป็น ภาษาอังกฤษ										
29. เขียนคำสั่งหรือขั้นตอนการ วิเคราะห์เป็นภาษาอังกฤษ										
30. เขียนคู่มือหรือหนังสือเป็น ภาษาอังกฤษ										

ส่วนที่ 4 ความคิดเห็นและข้อเสนอแนะในการจัดหลักสูตรฝึกอบรมภาษาอังกฤษให้กับนักวิจัย วว.

คำชี้แจง กรุณาทำเครื่องหมาย ✓ ลงในช่อง ☐ ที่ท่านต้องการมากที่สุดหรือเขียนตอบลงในช่องว่าง

1. ท่านต้องการให้ วว. จัดอบรมหลักสูตรภาษาอังกฤษสำหรับการทำงานหรือไม่

☐ ใช่ ต้องการ (กรุณาตอบข้อถัดไป) ☐ ไม่ต้องการ (สิ้นสุดการตอบแบบสอบถาม)

2. ท่านต้องการพัฒนาทักษะภาษาอังกฤษด้านใดมากที่สุด

☐ การฟัง ☐ การพูด ☐ การอ่าน ☐ การเขียน

3. ท่านต้องการอบรมในช่วงเวลาใด

☐ เวลาทำงาน (ช่วงบ่าย) ☐ หลังเลิกงาน (ช่วงเย็น)

☐ วันหยุดสุดสัปดาห์ (เสาร์ - อาทิตย์) ☐ อื่น ๆ (โปรดระบุ) _____

4. ท่านต้องการเข้าร่วมหลักสูตรฝึกอบรมภาษาอังกฤษบ่อยแค่ไหนต่อสัปดาห์

☐ อาทิตย์ละครั้ง ☐ 2 ครั้ง ต่อสัปดาห์

☐ 3 ครั้ง ต่อสัปดาห์ ☐ อื่น ๆ (โปรดระบุ) _____

5. ท่านต้องการเรียนครั้งละกี่ชั่วโมง

☐ 1 ชั่วโมง ☐ 2 ชั่วโมง ☐ 3 ชั่วโมง ☐ อื่น ๆ (โปรดระบุ) _____

6. ท่านต้องการเรียนกับผู้สอนภาษาอังกฤษแบบใด

☐ อาจารย์เจ้าของภาษาเท่านั้น ☐ อาจารย์ไทยเท่านั้น

☐ ทั้งอาจารย์เจ้าของภาษา และอาจารย์ไทย

7. ท่านสะดวกให้สัมภาษณ์ในเชิงลึกหรือไม่ (หากยินดีให้สัมภาษณ์ผู้วิจัยจะติดต่อกลับเรื่อง วัน เวลา และสถานที่ ในการสัมภาษณ์ภายหลัง)

☐ สะดวกให้สัมภาษณ์ ติดต่อทางอีเมล.....

☐ ไม่สะดวกให้สัมภาษณ์

Appendix C

Interview questions for

Senior researcher, Researcher and Research assistant

- (1) What situation in professional context do you most frequently use English language?
- (2) What English skill is the most necessary for your career work?

คำถามที่ใช้สำหรับสัมภาษณ์นักวิจัยอาวุโส นักวิจัย และนักทดลองวิทยาศาสตร์วิจัย

- 1. สถานการณ์ในการทำงานใดที่ท่านใช้ภาษาอังกฤษบ่อยที่สุด
- 2. ท่านคิดว่าทักษะภาษาอังกฤษใดที่จำเป็นต่อการทำงานของคูณมากที่สุด

Appendix D

AF 05-04

	คณะกรรมการจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี
	เอกสารแสดงความยินยอมเข้าร่วมในโครงการวิจัย (Informed Consent Form)

การวิจัยเรื่อง Professional Needs and Challenges for the Development of English language Proficiency at a Research Institute Pathum Thani : A Situational Analysis

วันให้คำยินยอม วันที่.....เดือน.....พ.ศ.....

ข้าพเจ้า นาย/นาง/นางสาว..... ที่อยู่.....

.....ได้อ่านรายละเอียดจากเอกสาร
ข้อมูลสำหรับผู้เข้าร่วมโครงการวิจัยวิจัยที่แนบมาฉบับวันที่..... และข้าพเจ้ายินยอม
เข้าร่วมโครงการวิจัยโดยสมัครใจ

ข้าพเจ้าได้รับสำเนาเอกสารแสดงความยินยอมเข้าร่วมในโครงการวิจัยที่ข้าพเจ้าได้ลงนาม และ
วันที่ พร้อมด้วยเอกสารข้อมูลสำหรับผู้เข้าร่วมโครงการวิจัย ทั้งนี้ก่อนที่จะลงนามในใบยินยอมเข้าร่วม
การวิจัยนี้ ข้าพเจ้าได้รับการอธิบายจากผู้วิจัยถึงวัตถุประสงค์ของการวิจัย ระยะเวลาของการทำวิจัย
วิธีการวิจัย รวมทั้งประโยชน์ที่จะเกิดขึ้นจากการวิจัย และข้าพเจ้ามีเวลาและโอกาสเพียงพอในการ
ซักถามข้อสงสัยจนมีความเข้าใจอย่างดีแล้ว โดยผู้วิจัยได้ตอบคำถามต่าง ๆ ด้วยความเต็มใจไม่ปิดบัง
ซ่อนเร้นจนข้าพเจ้าพอใจ

ข้าพเจ้ามีสิทธิที่จะบอกเลิกเข้าร่วมในโครงการวิจัยเมื่อใดก็ได้ โดยไม่จำเป็นต้องแจ้งเหตุผล และ
การบอกเลิกการเข้าร่วมการวิจัยนี้ จะไม่มีผลต่อการทำงานของท่านแต่อย่างใด

ผู้วิจัยรับรองว่าจะเก็บข้อมูลส่วนตัวของข้าพเจ้าเป็นความลับ และจะเปิดเผยได้เฉพาะเมื่อได้รับ
การยินยอมจากข้าพเจ้าเท่านั้น

ผู้วิจัยรับรองว่าจะไม่มีการเก็บข้อมูลใด ๆ เพิ่มเติม หลังจากที่ข้าพเจ้าขอยกเลิกการเข้าร่วม
โครงการวิจัยและต้องการให้ทำลายเอกสารทั้งหมดที่สามารถสืบค้นถึงตัวข้าพเจ้าได้

ข้าพเจ้าเข้าใจว่า ข้าพเจ้ามีสิทธิที่จะตรวจสอบหรือแก้ไขข้อมูลส่วนตัวของข้าพเจ้าและสามารถ
ยกเลิกการให้สิทธิในการใช้ข้อมูลส่วนตัวของข้าพเจ้าได้ โดยต้องแจ้งให้ผู้วิจัยรับทราบ

ข้าพเจ้าได้ตระหนักว่าข้อมูลในการวิจัยของข้าพเจ้าที่ไม่มีการเปิดเผยชื่อ จะผ่านกระบวนการ
ต่าง ๆ เช่น การเก็บข้อมูล การบันทึกข้อมูลในแบบบันทึกและในคอมพิวเตอร์ การตรวจสอบ การ
วิเคราะห์ และการรายงานข้อมูลเพื่อวัตถุประสงค์ทางวิชาการ เท่านั้น

	คณะกรรมการจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยเทคโนโลยีราชมงคลธัญบุรี
	เอกสารแสดงความยินยอมเข้าร่วมในโครงการวิจัย (Informed Consent Form)

ข้าพเจ้าได้อ่านข้อความข้างต้นและมีความเข้าใจดีทุกประการแล้ว ยินดีเข้าร่วมในการวิจัยด้วยความเต็มใจ จึงได้ลงนามในเอกสารแสดงความยินยอมนี้

ลงนาม.....ผู้ให้ความยินยอม
(.....)
วันที่ เดือน พ.ศ.

ข้าพเจ้าได้อธิบายถึงวัตถุประสงค์ของการวิจัย วิธีการวิจัย รวมทั้งประโยชน์ที่จะเกิดขึ้นจากการวิจัยอย่างละเอียด ให้ผู้เข้าร่วมในโครงการวิจัยตามนามข้างต้นได้ทราบและมีความเข้าใจดีแล้ว พร้อมลงนามลงในเอกสารแสดงความยินยอมด้วยความเต็มใจ

ลงนาม.....ผู้ทำวิจัย
(.....)
วันที่ เดือน พ.ศ.

ลงนาม.....พยาน
(.....)
วันที่ เดือน พ.ศ.

Appendix E

AF 11-04



COA No. 11

RMUTT_REC No. Exp 11/67

The Research Ethics Committee of Rajamangala University of Technology Thanyaburi
39 Moo 1, Klong6, Khlong Luang Pathum Thani 12110 Tel: +66(0) 2549 4640

Certificate of Expedited

The Research Ethics Committee of Rajamangala University of Technology Thanyaburi has exempted the following study which is to be carried out in compliance with the international guidelines for human research protection as Declaration of Helsinki, The Belmont Report, CIOMS Guideline, International Conference on Harmonization in Good Clinical Practice (ICH-GCP)

Study title: Professional Needs and Challenges for the Development of English language Proficiency at a Research Institute Pathum Thani: A Situational Analysis.

Study code: Exp 11/67

Principal investigator: MISS MARIYA SANKEAW

Study center: Faculty of Liberal Arts

Review method: Expedited

Progress report: Final report or no more than a year.

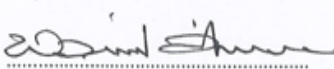
Document reviewed: 1. Submission form version 2 dated 19 March 2024

2. Participant information sheet version 2 dated 19 March 2024

3. Informed consent form version 2 dated 19 March 2024

4. Questionnaire and Interview Questions version 2 dated 19 March 2024

5. Curriculum Vitae and Certificate of Completion

Signature 

(Assist. Prof. Dr. Pongpith Tuenpusa)

Chairperson

Date of Expedited: 19 MAR 2024

Date of Expiration: 18 MAR 2025

บันทึกข้อความ
Memorandum

เรียน
To ผอ. ผ่าน รอง ผอ. อช. ผ่าน ผอ.ศนท.

จาก
From นางสาวมาเรียห์ แสนแก้ว

วันที่
Date 29 พฤศจิกายน 2566

2716
80 N. 9. 66

Appendix G
The results of Item-Objective Congruence (IOC)
Instrument 1: Questionnaire

Items	Question	Item-Objective Congruence (IOC) score					Result
		Expert 1	Expert 2	Expert 3	Total score	Average score	
Part 1: Background Information							
1.	Gender	+1	+1	+1	3	1.00	Acceptable
2.	Age	+1	+1	+1	3	1.00	Acceptable
3.	Education level	+1	+1	+1	3	1.00	Acceptable
4.	Work Experience in TISTR	+1	+1	+1	3	1.00	Acceptable
5.	Department	-1	+1	+1	3	1.00	Acceptable
6.	Current position	+1	+1	+1	3	1.00	Acceptable
7.	How often do you use English in the workplace?	+1	+1	0	2	0.67	Acceptable
8.	How would you rank your level of proficiency?	-1	+1	-1	-1	- 0.33	Unacceptable

9.	Please rate your English skills that are problematic for your career work	-1	+1	-1	-1	- 0.33	Unacceptable
10.	Please rate your English skills that are a necessity for your career work.	-1	+1	-1	-1	- 0.33	Unacceptable
Part 2 - 3: Challenges and professional needs in English language used at workplace							
1.	Listening to English conversation with foreigners	+1	+1	-1	1	0.33	Unacceptable
2.	Listening to English conversations on the telephone	+1	+1	+1	3	1.00	Acceptable
3.	Listening to the English presentations in academic or international meeting	+1	+1	+1	3	1.00	Acceptable
4.	Listening to English-language question and answer at academic or international meetings	+1	+1	-1	1	0.33	Unacceptable
5.	Listening to academic English speech in conferences	+1	+1	+1	3	1.00	Acceptable
6.	Listening to suggestions in English	+1	+1	+1	3	1.00	Acceptable

7.	Listening and comprehending information from English lecture class	+1	+1	+1	3	1.00	Acceptable
8.	Listening to tape recording for international meetings/ proceeding	+1	+1	+1	3	1.00	Acceptable
9.	Making conversation with foreigners	+1	+1	+1	3	1.00	Acceptable
10.	Speaking on the telephone with foreigners	+1	+1	+1	3	1.00	Acceptable
11.	Greeting and welcoming foreigners	+1	+1	+1	3	1.00	Acceptable
12.	Making an English-language discussions at academic or international meetings	+1	+1	+1	3	1.00	Acceptable
13.	Oral presentation on research project proposals in English	+1	+1	+1	3	1.00	Acceptable
14.	Reporting on the projects in English language	+1	+1	+1	3	1.00	Acceptable
15.	Making a speech in English	+1	+1	+1	3	1.00	Acceptable
16.	Giving advice or suggestions in English	0	+1	+1	2	0.67	Acceptable
17.	Making questions and answers in English in academic conferences	+1	+1	+1	3	1.00	Acceptable
18.	Reading letters or e-mails in English	+1	+1	+1	3	1.00	Acceptable

19.	Reading articles, journals, or academic research papers in English	+1	+1	+1	3	1.00	Acceptable
20.	Reading English documents in academic or international meeting	+1	+1	+1	3	1.00	Acceptable
21.	Reading English newspaper/ leaflet/ announcement	+1	+1	+1	3	1.00	Acceptable
22.	Reading contracts and legal documents in English	+1	+1	+1	3	1.00	Acceptable
23.	Reading the criteria for research grant applications	+1	+1	-1	1	0.33	Unacceptable
24.	Writing e-mails in English	+1	+1	0	2	0.67	Acceptable
25.	Writing articles, journals, proposal or academic report in English	+1	+1	+1	3	1.00	Acceptable
26.	Writing research paper review/ comment and editing	+1	+1	0	2	0.67	Acceptable
27.	Writing meeting program or schedule in English	+1	+1	+1	3	1.00	Acceptable
28.	Writing official letters for invitation	+1	+1	-1	1	0.33	Unacceptable

29.	Writing work instruction or analytical procedure in English	+1	+1	+1	3	1.00	Acceptable
30.	Writing handbook/book in English	+1	+1	0	2	0.67	Acceptable
Part 4: Opinion and suggestions for arranging an English language training course for researchers at TISTR							
1.	Do you want TISTR to have an English training course?	+1	+1	+1	3	1.00	Acceptable
2.	Which English skill do you want to develop the most? (Choose only one choice)	+1	+1	+1	3	1.00	Acceptable
3.	What period of time do you want to attend the training?	+1	+1	+1	3	1.00	Acceptable
4.	How often do you want to attend the English training course per week?	+1	+1	+1	3	1.00	Acceptable
5.	How long does it take to attend the English training course?	+1	+1	+1	3	1.00	Acceptable
6.	What type of English teachers do you prefer to study with?	+1	+1	+1	3	1.00	Acceptable
7.	What professional contexts do you most frequently use in English language?	0	+1	-1	0	0.00	Unacceptable
8.	Other suggestions for arranging an English language training course	0	+1	-1	0	0.00	Unacceptable
9.	Are you available for an in-depth interview?	+1	+1	-1	1	0.33	Unacceptable

The researcher selected tests with a reliability coefficient ranging from 0.60 to 1.00

Appendix H
The results of Item-Objective Congruence (IOC)
Instrument 2: Interview

Items	Question	Item-Objective Congruence (IOC) score					Result
		Expert 1	Expert 2	Expert 3	Total score	Average score	
1.	What situation in professional context do you most frequently use English language?	+1	+1	+1	3	1.00	Acceptable
2.	What are the most challenging aspects of Academic English?	+1	+1	-1	1	0.33	Unacceptable
3.	What English skill is the most necessary for your career work?	+1	+1	+1	3	1.00	Acceptable
4.	From your experience in TISTR, which specific sub-skills of English do you needs to be proficient in? Please give an example.	+1	+1	-1	1	0.33	Unacceptable

5.	Do you have any recommendations for designing English language training courses for researchers at TISTR?	0	+1	-1	0	0.00	Unacceptable
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The researcher selected tests with a reliability coefficient ranging from 0.60 to 1.00

Appendix I

Interviews transcript

Phrase 1

Officer 1

Interviewer: What are the situations in which the researcher must use English? Please give an example.

Officer 1: There are several situations, such as presenting work, which involves delivering PowerPoint presentations at meetings or conferences, both in-person and online via platforms like Zoom. These presentations could be in the form of oral presentations or poster presentations presented at poster sessions.

Interviewer: And in the field of research writing?

Officer 1: Writing also plays a crucial role because researchers need to produce academic work such as articles and research papers, depending on each individual's Key Performance Indicators (KPIs) regarding academic publication. However, if I understand correctly, for academic papers published abroad, it may require experienced researchers or scholars. I'm not sure; it might be necessary for researcher or senior researcher. Additionally, there's listening, which often accompanies speaking, presenting, or discussing research findings.

Interviewer: In terms of listening, most of the time, people tend to listen to academic content in conferences like this. Is that correct?

Officer 1: Yes, in conferences.

Interviewer: And how about reading? Is that necessary as well?

Officer 1: Yes, there must be. It's essential because in receiving emails like this, they have to read it, or even in research work, there needs to be reading of research papers from abroad.

Interviewer: Do you think there's anything else? that researchers must use English in their work Including the assistant researcher?

Officer 1: Yes

Interviewer: In 3 positions, who used English the most?

Officer 1: If we consider the three positions that require English the most, they are predominantly occupied by either senior researchers or researchers. This is because activities such as international collaborations or presentations on international stages typically require individuals who are groomed with a certain level of knowledge. Mostly, they are at the researcher level. As for senior researchers, they often hold project leadership roles where they need to have a track record of collaborative work and innovate something novel that requires knowledge from abroad. They are also responsible for building networks and seeking funding. In this way, they function at the level of senior researchers.

Interviewer: If it comes to finding research funding, most of the skills used will be in writing, right?

Officer 1: So, it involves writing proposals, but there also needs to be communication because, firstly, you have to find partners abroad, and that requires talking to each other. You need to introduce your project proposal and see what they're interested in collaborating on, something like that. So, you approach potential collaborators and discuss these things. As for reading, it would involve understanding the concepts of the specific funding screens.

Officer 2

Interviewer: In what situations do researchers need to use English in terms of career advancement?

Officer 2: Mostly, it's about translating English into Thai and vice versa. Also, writing essays in response to questions, and as for grammar choices or word insertions, there shouldn't be much of an issue because there are options available.

Interviewer: So, it's going to be somewhat similar to an exam format?

Officer 2: We have exams where we provide topics, and then they write essays on the specified topics. For example, it could be about research interests or recounting work experiences, all in English. Then they might have to write articles or summaries, which could be like a research paper, around 5 to 6 pages long. We ask them to summarize it into about half. But the main challenge for most people, or maybe around 10% of the total exam takers, is writing the essay on the assigned topic. Some might find it difficult to meet the minimum word count, for example, 1,000 words. We see that the main issue lies in writing, especially because we don't assess conversational skills, so we can't measure that aspect.

Interviewer: Most of the topics covered are related to writing their research, reading, and summarizing?

Officer 2: Each year, we provide them with topics related to their work or perspectives on the organization. They may need to spend some time writing because we have a limited time for the exam, only 3 hours. Both grammar choices and writing, as well as translating, can be time-consuming. With the time limited, they may not be able to write well.

Interviewer: I'd like to delve deeper into why many candidates don't pass, as far as I can see. Generally, most of them don't pass because of time limited or other factors.

Officer 2: It seems to be about time, as researchers have previously requested an extension of the exam time. Originally, it was set for 3 hours, but in the past years, we adjusted it to 3 and a half hours. They actually asked for 4 hours, but we felt that it would be too much time for the exam. So, we settled on 3 and a half hours, which helped to

some extent. However, if someone isn't genuinely prepared, even the extra time won't make a difference.

Interviewer: And as for the issues, it could be with writing, word choice, sentence structure, grammar, or something along those lines.?

Officer 2: It seems to be about vocabular, grammar or anything like that. It's like they can't express themselves well. They have the imagination in Thai, but when they try to translate it into English, they struggle to find the right words or translate properly. It's like they understand everything in Thai, but when it comes to English, they have limitations in terms of translation, including grammar and stuff, but that's relatively minor.

Interviewer: It's not considered a big problem, right?

Officer 2: It means that for researchers with this kind of characteristic, if, for example, there are 10 people taking the exam, maybe only 1 or 2 won't pass. That's not a lot. Those who pass usually are those with a Ph.D. background, so it's not very difficult for them. But for those who fail, they might have been away from studying for a long time or something like that. Also, there's a time limited. They don't have time to research. But if they write outside of the exam, they might be able to write.

Phrase 2

Researcher 1

Interviewer: Please introduce yourself

Researcher 1: I'm Sawitree, a researcher of the Expert Centre of Innovative (InnoAgri). My responsibilities are tissue culture.

Interviewer: In the field of research work, what situation you need to use English?

Researcher 1: The most common situation is often when foreign guests come to visit, mostly for meetings. In such cases, communication skills are crucial. Presentation is important because we need to explain our work for them to understand. Another important skill is listening, as when guests come to inspect our work, we need to know what they want. Generally, if there are no specific assignments, guests usually come, and another important aspect is presenting. When they come to visit, we must explain to them. We have to present, and there are academic presentations, right? Academic presentations involve presenting our work, and generally, we have to introduce our organization to them. Typically, in general situations, it's like this. However, when we delve into the specifics of the work, we often have to write papers. Writing skills are crucial, especially when it comes to academic writing. Academic writing isn't like casual email correspondence. Usually, even emails take time when we communicate with foreigners, right? Even if they don't primarily use English, like in Japan, we still have to communicate in English. When we converse, it can't just be casual. It has to be business-like, official. When we ask them to do something, it's like we're writing an email, not chatting with a friend. It's not like casual chat. We have to maintain a certain level of politeness, like when we're asking for cooperation. That's the situation.

Researcher 1: So, at this point, what we mainly do is speak, listen, and write. Reading is also involved, but mostly we use it when we're looking for references, which are typically academic. When it comes to reading, it's not that extensive because we're just reading for references. Then, we have to write it in our own format. And academic vocabulary, well, it's quite specific to the field. The vocabulary doesn't differ much, but there are specialized terms, especially in fields like agriculture or engineering. If it's in

agriculture, the vocabulary would revolve around that field. In my opinion, generally in work, it's about listening, speaking, and sometimes writing. But if we were to rank them, speaking would be first, listening second, as these two are used most frequently.

Interviewer: So, these seem to be essential skills for the job, right?

Researcher 1: So, are English language skills necessary for work? Actually, yes, they are essential in all aspects—listening, speaking, reading, and writing. But if we rank them, generally, in daily life, it's mainly about speaking. Speaking and listening. But when it comes to writing, well, nowadays, we have Line or chat applications, right? If we're close enough with someone, we just chat. It's easier than email because email needs a format, an introduction, and a conclusion. But some people might not be that formal. It depends on the level of closeness and the formality of our conversation partner. If you've been working together for a long time, emails tend to become shorter. It's like chat messages all the time. Once we start chatting, we don't need to beat around the bush anymore. We can get straight to the point. But generally, emails are for those who aren't very close, it's kind of formal, between departments, you know? For researchers like me, it's rare to write a formal email. So, most of the English we use is for presentations. Once we finish presenting, there's usually a Q&A session. If we don't understand, we have to listen carefully to know what they're asking. We need to grasp the main idea of what they want from us. So, the essential skills for me are speaking and listening.

Researcher 1: But actually, reading and writing are important too. While generally it's about speaking and listening, once we're involved in research projects, writing becomes crucial. At least we have to write an abstract. Even if the entire document is in Thai, there will still be an English section, which is the abstract. So, we have to write the abstract properly.

Interviewer: If the organization is planning to conduct English language training, what skills would you suggest they focus on to enhance development?

Researcher 1: If there's training, I think English presentation skills are crucial. Because when we listen, we can speak based on what we've heard. Listening and speaking usually go hand in hand. But when it comes to speaking, grammar doesn't have to be perfect. However, when writing, grammar serves as evidence of mistakes, especially with tenses. In speaking, tense accuracy isn't as critical, but in writing, it has to be spot on. But

how do we practice these? Writing skills take a long time to develop. So, if we think about it, training on presentation skills would be better. It's more practical because, at least, we have to go and present our work. Even if we're not the ones presenting in front of the room, most likely, we'll be manning the booth. We can't avoid people coming and asking us about our work. At the very least, we need to know how to present our products, which is crucial. If we've been trained and we have our work in hand, we can explain it. It doesn't have to be a formal presentation at a seminar. Just being able to explain our work to others is okay. Introducing ourselves, our organization, and our work, that's okay. Presentation skills, I think, would be okay for training. Also, we need to practice listening because if we speak without understanding, or if we listen to others without understanding, it won't be beneficial. We explain, they ask questions, if we don't understand, it's not going to work. The top priority is speaking.

Researcher 2

Interviewer: Please introduce yourself

Researcher 2: My name is Sinee Sirikul, and I'm a researcher at the Expert Centre of Innovative Herbal Products (InnoHerb). My main responsibility is cell culture, which involves cultivating various tissue samples. Additionally, I assist in animal testing. InnoHerb also provides analysis and testing services, so when clients come in, we conduct the necessary tests. My specific area of focus is immunology and toxicology. Currently, I'm studying micro-nucleus examination. As for documentation work, I handle some tasks, and there's also plant extraction involved, such as extracting pandan leaves. Projects vary depending on the department and the year.

Interviewer: In the field of research work, what situation you need to use English?

Researcher 2: Reading is crucial, especially when writing project proposals. We need to review literature, which means we have to read English-language journals to incorporate references into our projects. Here, most projects require references, so we have to use projects that they've referenced before, especially if we're working with a particular plant species or group. When we write our project proposals, we have to choose,

for example, if I'm working on plants, I have to select this particular plant species. When we present our projects to the executives, they'll ask why we chose this plant species, so we have to provide references to show that we've read about it. It has certain properties. However, we're not sure if our project will have the same effects because every situation is different. Then, I have projects that are collaborations with WAITRO, which means working with international researchers. So, when we attend meetings, they're conducted in English, and we have to use English. (all skills)

Interviewer: So, you have to use all four language skills, right?

Researcher 2: Yes, but it might not be in a formal setting like in your questionnaire where it asks about giving speeches in the conference. In those cases, I don't need to use that. Instead, it's more like everyday communication. However, if we're talking about something formal, then yes, I have to write. Usually, as researchers, we have to write papers. It means when we complete a project, we have to commit to it and write and submit it for publication. This could be in journals or proceedings, but mostly it's international publications.

Interviewer: According to the Key Performance Indicators (KPIs) of the InnoHerb, do you have to publish internationally or not?

Researcher 2: It's not explicitly stated, but generally, in my field of cell culture, I tend to publish internationally because it's easier to write in English. If I were to write in Thai, it might seem unusual, so I usually write in English. This is what I mostly do. Previously, the executive would ask me to prepare scripts in English for events where English was required, like opening speeches at conferences or international seminars. So, English is used for those occasions. Also, there's project proposal writing in English. These are the tasks I've been doing since I started working here.

Interviewer: What skills in English do you think are necessary or important for your work or being a researcher?

Researcher 2: I think it's all crucial. However, for a researcher, the top priority is reading because, as mentioned, we need to study a lot of information. So, if we have good reading skills, it'll be easier to understand. Secondly, being able to read quickly is important because sometimes we're racing against time, like meeting deadlines today. So, if we have good reading skills, we can scan quickly, around that much. Next is speaking

and listening, they go hand in hand. Sometimes, when we attend international meetings, we inevitably encounter people from different countries. Or when we present, we often have to answer questions. Most recently, I encountered a committee, not sure which country they were from, but when we present at international events, some of the listeners are international. They might ask us questions in English, even if they're Thai. So, when we present at such events, we have to use English. As you said, sometimes listening accompanies speaking, especially in a work context. We have to use it, like when we attend meetings or present something like this. During the WAITRO project meeting via Zoom, everyone communicated in English. Another project, the APO project, involves exchanges between Thailand and other countries. We have joint meetings where we present our work. For example, if the theme is Agriculture and Food, sometimes I have to prepare information about our country to present to exchange knowledge with other countries. They usually have their own presentations and group work activities. We have to communicate with other countries, whether it's through email, Line, or WhatsApp, whichever communication platform each country prefers.

Interviewer: In meetings like this, do they select researchers every year?

Researcher 2: Yes, every year they rotate the themes to see which researchers fit each theme. I've attended meetings they organized in Bangkok, before the COVID-19 pandemic. We used to gather at a hotel. Initially, we would listen to lectures, and then in the afternoon, we'd break into groups to discuss and develop plans for presentations. After Covid, it became a bit challenging because everything shifted online. Moreover, each country has different time zones. Sometimes, we had to attend online meetings late at night because while it might be morning in our country, it could be midday in another. This posed a challenge for online meetings. However, we managed by communicating through chat, dividing tasks, and then reconvening for the meeting, as we still needed to prepare documents to submit.

Interviewer: If the TISTR were to conduct training sessions, what specific skills do you think should be emphasized?

Researcher 2: As mentioned in the questionnaire, I would prefer training focused more on speaking skills. Since I primarily use Thai as my main language, there are fewer opportunities for me to speak English. While I can speak English, if I haven't used it for

a while, I might need some time to think and gather my thoughts before speaking. Therefore, I think it would be beneficial to simulate presentation scenarios during training sessions. For example, practicing pitching projects, presenting work, or engaging in Q&A sessions. Such exercises, in the context of work, would be valuable for us.

Researcher 3

Interviewer: Could you please introduce yourself

Researcher 3: My name Nattaphon, a researcher at Biodiversity Research Centre (BRC) our responsibilities are R&D on bio-substance and bio-materials with biological processing technology.

Interviewer: In the field of research work, what situation you need to use English?

Researcher 3: Mostly, it will involve communicating through email, telephone or chat with international entities or individuals, such as organizations or researchers. We exchange information or prepare Memorandums of Understanding (MOUs) for future collaborations. If it's with a research institution, we contact them expressing interest in their research work, and they'll then provide contact details of the liaison person. Then, we can discuss the details further.

Interviewer: What skills in English do you think are necessary or important for your work or being a researcher?

Researcher 3: Indeed, for researchers, writing is crucial. In reality, every aspect is important, but writing is paramount because it's the means through which we present our work to the academic community via scholarly articles.

Interviewer: Do you think that writing is the most important and essential aspect?

Researcher 3: Yes

Interviewer: If the TISTR were to conduct training sessions, what specific skills do you think should be emphasized?

Researcher 3: Actually, I would like training to cover all skills. It might be divided into two parts: general skills such as listening, speaking, reading, and writing, which should be provided to all employees, not just researchers. This general training should be comprehensive. However, those interested in specific areas can opt for

specialized courses, such as academic writing or communication skills. It's like delving deeper into a particular field.

Interviewer: Do you think English is important for work?

Researcher 3: Yes, it's very important. Another crucial point is preparing English language skills for those who are planning to study abroad, whether they receive scholarships or fund themselves. This is another important case because they need to prepare for exams like IELTS, TOEFL, and so on. This is important because researchers at our institution go for further studies abroad every year. Therefore, there are individuals who need to prepare in advance. It may take a couple of years to arrange everything properly.

Researcher 4

Interviewer: Could you please introduce yourself

Researcher 4: My name's Junsuda, a researcher at the Expert Centre of Innovative Health Food (InnoFood).

Interviewer: In the field of research work, what situation you need to use English?

Researcher 4: In terms of work tasks, if it's about reading, it mostly involves searching for information as references. When it comes to speaking, it might involve spending time with foreign visitors coming to the organization or collaborating with international partners on various projects. As for writing tasks, I consider it to be minimal at present. If there is any, it would likely involve writing papers for international publications. However, as for how much it's used, I'd say it's very minimal.

Interviewer: Does writing an abstract require any usage, right?

Researcher 4: In fact, almost every report has its abstract written in English. However, just the abstract.

Interviewer: And what do you think are the essential skills in our work? Listening, speaking, reading, writing. Which skill do you think is the most necessary?

Researcher 4: Is it the most necessary skill in terms of research work? Well, the job itself is quite diverse. But if it's in the context of research, I think currently it would

be reading. There's a lot of reading involved. However, beyond research work, it would shift to speaking and listening, which are not directly related to research. I mean, it's about communication, hosting guests, or interacting in some way. So, those two skills would be important. As for writing, I think it's the least necessary. Sometimes, there's emailing involved, and in terms of research work, it would be things like writing abstracts. But currently, if it's about myself, I haven't really produced many international papers yet, just did some during studies. But I think it will be more important going forward because the demand seems to be increasing.

Interviewer: It related about KPIs?

Researcher 4: Actually, they don't really mind. For the next KPI, they almost won't consider papers at all because it doesn't generate income. If there is any, it's just a top-up. But if there isn't any, it's okay. Because some people can almost get by without having to do papers if they can find other ways to generate income.

Interviewer: But when it comes to finding project funding, do we still need to write papers, right?

Researcher 4: Yes, however, for proposals seeking funding within Thailand, they typically use Thai language exclusively nowadays. Except for cases of funding from foreign sources or collaborations with international universities or organizations, which may require writing certain parts in English.

Researcher 5

Interviewer: Could you please introduce yourself

Researcher 5: My name Narisa, a researcher at Expert Centre of Innovative Health Food (InnoFood).

Interviewer: In the field of research work, what situation you need to use English?

Researcher 5: Reading papers is important, as they are often utilized extensively. Additionally, listening skills are crucial during seminars and academic events.

Interviewer: In terms of the necessity of these four skills, what's the most important in the workplace?

Researcher 5: Reading is the most essential. Listening is also necessary. Regarding speaking, if we don't have to discuss with others, we might not need it, but if we can speak and communicate well, it's okay. It enables us to exchange knowledge more effectively.

Interviewer: What about writing?

Researcher 5: Writing is also included, but personally, I don't use it much because recently I've been focusing on research funded domestically.

Interviewer: You mostly write funding proposals in the country, right? They're all in Thai?

Researcher 5: Yes, recently, there's been a lot of funding for OTOP, and we've been focusing on this because we need income to support our subordinate. So, right now, we're not paying attention to other matters.

Interviewer: If the TISTR were to conduct training sessions, what specific skills do you think should be emphasized?

A: Actually, there are frequent training sessions, but I feel they're too basic. People who are working already have received training in the past to advance. They already know. However, it should ideally be more specialized training. I've taken various courses to learn how to speak and communicate with foreigners. But once I finish the course, I forget because I don't use it.

Interviewer: Do you want specialized training for each skill, right?

Researcher 5: Yes, if it's for researchers, I think training should focus on listening, speaking, and writing. But not in the sense of teaching basic grammar or verbs, as they've already passed that stage. However, for those who may have forgotten, it could be good to review. But I believe there should be advanced training to help us improve further.

Researcher 6

Interviewer: Could you please introduce yourself

Researcher 6: My name Papitchaya, a researcher at Expert Centre of Innovative Agriculture (InnoAgri).

Interviewer: In the field of research work, what situation you need to use English?

Researcher 6: Mostly, situations where we use English involve listening to seminars at conferences, replying to emails, and reading research papers.

Interviewer: If you think about the skill that is used most frequently, what would it be?

Researcher 6: Reading and listening are used the most, while speaking and writing aren't used as much.

Interviewer: Which skill is most necessary for work?

Researcher 6: For me the most important skill is speaking.

Interviewer: Earlier, you mentioned that the most frequently used skill is reading, but now if the necessary skill is speaking, right?

Researcher 6: Speaking and reading, these two are probably the most important.

Interviewer: Why do you think speaking skills are considered the most important?

Researcher 6: For me, I think it's necessary because I'm not good at speaking. But reading, we usually have to use it. Because most research work is in English.

Interviewer: When it comes to speaking, in what situations do you think it's necessary? Is it for work-related communication, or perhaps for presenting or defending proposals?

Researcher 6: For speaking, I think it's necessary for work-related communication and coordination, especially because our organization often collaborates with international researchers, establishes MOUs, and conducts joint research projects. So, this skill is essential for such tasks.

Researcher 7

Interviewer: Could you please introduce yourself

Researcher 7: I'm Siriporn, a researcher at the Expert center of Food (InnoFood).

Interviewer: As a researcher, which situation do you usually used English language the most?

Researcher 7: It will mainly be about writing, academic writing like manuscripts and such. Sometimes, there will be conferences with international collaborators for joint projects, and also writing proposals for international funding.

Interviewer: Do you use English for writing grant proposals?

Researcher 7: Yes, I do. Also, sometimes I'm invited to be a 1(1)speaker at conferences.

Interviewer: In this case, it can be considered that you use English frequently, right?

Researcher 7: It's considered quite frequent because since I started working here, I've been a speaker frequently. They asked me to be a speaker online during the COVID-19 period. At that time, the conference was supposed to be held on-site, but it had to be shifted online due to the pandemic. They requested a representative from our institution for the protein-related topic, so I got the chance to speak.

Interviewer: It's mostly about speaking, isn't it?

Researcher 7: Yes, that's right. Speaking and writing. Writing involves creating manuscripts and grant proposals for funding projects. So, those are the two main skills.

Interviewer: What skills do you think are important or necessary for work or research?

Researcher 7: In terms of the work I'm currently doing, writing is probably the most important skill. Additionally, speaking is also crucial because I often communicate with people from different countries. Actually, all skills are important. If you're good at writing but can't speak, you can't communicate effectively. And you also need to listen and understand.

Interviewer: What skills do you think are obstacles or problems in your English language usage?

Researcher 7: For myself, I don't feel particularly strong in writing. In terms of vocabulary, sometimes I know the words and understand how our work should be structured, but I may need more time to write compared to Thai. Also, I might need to ask a language expert to help check the tense for me.

Interviewer: When applying for grants, ultimately it needs to be checked by a language expert, right?

Researcher 7: Yes, we might be a bit slower compared to other countries. For example, in the recent meetings with the Philippines and Indonesia, they sent proposals very quickly. However, we might need more time for writing than them.

Interviewer: Do you think writing is still challenges for you?

Researcher 7: Yes, just for me

Interviewer: Is there anything else you'd like to discuss regarding the use of English language?

Researcher 7: I think it would be beneficial for our organization to have frequent English language training projects to improve communication skills. Sometimes we communicate in Thai because we're Thai and understand each other well. However, in the future, we'll have to work more with foreigners. I'd like to see seminars where 'Punya sharing' shifts from Thai to English occasionally. I believe this could help elevate our communication skills within the organization. When I was in university, the university lab required everyone to speak only English. It was a form of training for us. Practicing presentations in English helped improve both speaking and listening skills. Having programs that focus on academic writing would be beneficial as well. The organization already has a project called 'Punya Sharing', right? However, sometimes it might be good to switch to English. It looks good, and it would be an opportunity to practice the language. If we don't practice, when will we improve?

Researcher 8

Interviewer: Could you please introduce yourself

Researcher 8: I'm Siritham, a researcher at Biodiversity Research Centre (BRC).

Interviewer: As a researcher, which situation do you usually used English language the most?

Researcher 8: The most frequently used English language skill in our work is reading. It's because in TISTR, we often need to read English articles, coordinate various research projects, and even read incoming emails. This is essential. The skill of reading is indeed the most frequently used, followed by writing. We need writing skills to respond to emails since physical letters are almost nonexistent nowadays. Additionally, writing

abstracts for research projects and publications in international journals is another essential writing skill we must use. Next, the two skills that go hand in hand are listening and speaking. Listening alone without speaking or speaking without understanding what is being said is ineffective. They must be used together. These two combined skills are referred to as conversation skills, encompassing listening and speaking. They are used less frequently than the first two skills because we don't often have the opportunity to interact with foreigners. Occasionally, we may encounter them at international conferences or when foreign guests participate in research projects with TISTR, but these instances are infrequent. Telephone conversations are even less common. Using these skills over the phone can be challenging because we only hear without seeing the speaker's face. Therefore, relying solely on listening without seeing facial expressions or lip movements during a conversation can lead to misunderstandings. Overall, these are the four English language skills used in the workplace at TISTR.

Interviewer: Therefore, reading is used the most, followed by writing. Listening and speaking skills are not utilized as frequently?

Researcher 8: Yes, listening and speaking skills are used together but not as frequently.

Interviewer: In the ERC department, do you coordinate or communicate with international researchers? Are there any collaborations or MoUs being established?

Researcher 8: Yes, In the ERC there are several researchers who have established MoUs. There are occasions where they have to fly abroad or welcome foreign guests at TISTR, and this happens regularly. However, personally, I am not directly responsible for those tasks. My involvement mainly revolves around reading and writing.

Interviewer: What skills do you think are important or necessary for work?

Researcher 8: I think reading and writing are more important because they are formal and academic skills. They are essential for communication, especially in a government agency like ours where communication tends to be formal. Therefore, these skills are crucial for both academic purposes and official communication.

Interviewer: So, reading and writing are essential for your work?

Researcher 8: Another thing to add is that nowadays, meetings and conferences or any form of communication often take place online, using platforms like Zoom.

Therefore, conversations on Zoom are mostly conducted formally. Slang or casual language usage is rare, and people tend to use language that closely resembles written language.

Interviewer: What skills do you think are obstacles or problems in your English language usage?

Researcher 8: The skill of conversation, it's used less frequently. Since it's used less, proficiency tends to be lower. Speaking and listening are essential because they're part of conversational skills. Language is a skill.

Interviewer: If TISTR organizes training for English language development, how do you think it should be structured?

Researcher 8: I think it might be beneficial to separate the training into two courses: one focusing on reading and writing, and the other on listening and speaking. As for the speaking aspect, it could include training for presentations or pitching projects. Ultimately, it depends on which aspect TISTR considers more important.

Interviewer: Train all four skills?

Researcher 8: It's like pairing them up, right? If you listen, you have to speak. Reading goes with writing as well. Something like that.

Researcher 9

Interviewer: Could you please introduce yourself

Researcher 9: I'm Waraporn, a researcher at the Expert Centre of Innovative Health Food (InnoFood).

Interviewer: As a researcher, which situation do you usually use English language the most?

Researcher 9: So, mainly it's about reading papers because when we plan experiments, we need references from previous research, which are mostly papers from international databases. This is something we use all the time. Then, it's about attending conferences with international collaborators. For example, I have collaborators from Indonesia and Denmark with whom I frequently communicate. So, it's about using English in those situations.

Interviewer: So, you mostly reading paper and attending conferences?

Researcher 9: Yes, primarily it's about two skills related to work. And on days when there's free time, I sometimes choose to watch movies with English subtitles and read the subtitles to practice the language. But I don't watch anything too difficult; mostly it's cartoons or something easy to understand.

Interviewer: Are there any aspects regarding writing?

Researcher 9: Writing, of course. We need to have publications in academic journals. Mostly, I choose to submit to international journals, meaning writing in English. Now, regarding grammar, it's not that great. Once the writing is done, I have to send it to a professor who's proficient in English to proofread.

Interviewer: Mostly, the writing involves writing for journals. Are there any other types of writing involved?

Researcher 9: The majority of reports are written in Thai, but there are instances where English is used, primarily in the abstract section. However, previously, I had a project funded by WAITRO, which required the entire report to be written in English. It depends on the funding source as to whether it's required or not.

Interviewer: Does this mean that you have used all skills: listening, speaking, reading, and writing?

Researcher 9: Yes, but to be honest, I still feel that the problem lies in speaking. Sometimes, I might not recall vocabulary quickly enough.

Interviewer: What skills do you think are important or necessary for work?

Researcher 9: If it's about working at TISTR, I think it's more about reading and writing, because I might not speak much. So, it would be about reading and writing.

Interviewer: What skills do you think are obstacles or problems in your English language usage?

Researcher 9: If it's about reading and writing, I don't really have any issues. However, the real challenge comes when we attend meetings or make presentations; we might lack confidence in communicating effectively. If it's outside our field, we might struggle to recall vocabulary.

Interviewer: If TISTR organizes training for English language development, how do you think it should be structured?

Researcher 9: It might be related to speaking and listening. Having foreign professors might make us feel more comfortable. I've been living abroad for almost a year, when I come back, I don't use English much. This can lead to a lack of confidence in using the language.

Interviewer: If it's about training on speaking skills, you would prefer training focused on conversational skills rather than specifically on presentations?

Researcher 9: If it's about presenting work, that would be great. When it comes to formal presentations, we need to consider the vocabulary we should use.

Researcher 10

Interviewer: Could you please introduce yourself

Researcher 10: My name Anan, senior researcher at Expert Centre of Innovative Agriculture (InnoAgri).

Interviewer: In the field of research work, what situation you need to use English?

Researcher 10: Meetings with committees, international organizations, traveling abroad, and researching are essential tasks.

Interviewer: Mostly used is speaking, right?

Researcher 10: When it comes to speaking, it's used in opportunities like traveling abroad. But in research-related tasks, it's more about reading.

Interviewer: Which skills are necessary or important for senior researchers?

Researcher 10: It's considered important for speaking and conversing more than anything else, because there needs to be coordination or conversations with researchers from other countries.

Interviewer: Besides speaking, what else is important?

Researcher 10: It should be related to reading papers.

Interviewer: It means that the situations you use it in align with what's necessary

Researcher 10: Yes, reading, speaking, and reading.

Interviewer: Have you written a lot?

Researcher 10: Not really written much, apart from when writing abstracts or something like that

Interviewer: And what about in terms of funding? Is English necessary?

Researcher 10: Actually, funding is necessary. However, there isn't much funding available for agriculture from foreign sources. Typically, in foreign countries, agriculture tends to focus more on establishing MOUs or collaboration rather than direct funding. It's similar to collaborative research.

Researcher 11

Interviewer: Could you please introduce yourself

Researcher 11: My name Nutnirin, senior - researcher at Expert Centre of Innovative Health Food (InnoFood). InnoFood focuses on research, development, service, analysis, testing and consultancy on functional food and beverage products.

Interviewer: In the field of research work, what situation you need to use English?

Researcher 11: The most frequently used skills are reading papers and writing publications. Actually, speaking skills are equally important and used frequently, ranging from researchers to senior researchers. However, 2(1) speaking is more prominent in cases involving MOUs with foreign entities or participating in international conferences.

Interviewer: So, which skill do you think is the most used?

Researcher 11: Most frequently used is reading, because reading is something that needs to be used every day.

Interviewer: For senior researchers in terms of KPI, is it necessary to publish international journals?

Researcher 11: It depends on each specific project. For projects related to novel foods, it's necessary to publish in international journals. However, for product food-related projects, publications in Thai Citation Index (TCI) level 1 journals are acceptable. This organization does not have positions or roles similar to university professors, so it doesn't require publications exclusively in international journals. These publications can be in either Thai or English. While it may not be explicitly required by the organization, it's beneficial to consider international publications as they contribute to global citation

and recognition. Therefore, it's advisable to pursue international publications when possible.

Interviewer: The KPIs haven't been adjusted yet to require publications exclusively in international journals, is that correct?

Researcher 11: So, while there are requirements in the KPIs, we still have other options. When it comes to international publications, there are various factors to consider. If we aim for international journals, it might take longer because the details in our work need to be thorough. It depends on the field of work. For instance, if it's related to food but not deeply specialized, it might be challenging to publish in international journals. However, it's better to prioritize international publications if we want our work to have a significant impact on others. In terms of gaining recognition in the field, publishing internationally is better. Nowadays, we often read papers from foreign researchers as well. If we want to be known internationally, publishing in international journals, or even in Thai journals but with an international level, is preferable. I believe it's better than publishing in Thai because Thai papers are mainly read by Thai people, and their citation rates are often lower. On the other hand, international publications or even being present on platforms like ResearchGate can attract more followers and attention.

Phrase 3

Director 1

Interviewer: Do you agree with the findings regarding the challenges, professional needs, and the want to develop English language skills among researchers at TISTR?

Director 1: I agree with the researchers' choice to select various scenarios of English language usage situations in their survey, as it comprehensively covers the language usage scenarios of researchers at the institute. However, due to the small and non-representative sample size of the research group, which does not encompass the entire population of research staff, including both R&D group for Bio Industry and R&D group for Sustainable Development, it is not possible to conclusively determine whether the challenges and necessities identified represent the majority opinion of researchers at the institute.

Interviewer: Do you think there should be training sessions? If yes, what format or specific skills do you think should be emphasized?

Director 1: There should be training sessions for all four language skills because they are necessary for employees, not just researchers, but also staff in academic fields. However, we need to identify the specific gaps and needs of each individual. Each person faces different challenges and requirements in using English, so it's important to gather opinions on the skills they want to develop, particularly. Regarding the format of training sessions, I believe a hybrid approach would be suitable. This allows flexibility for learning anytime, anywhere, but on-site learning is also necessary to foster interaction between learners and instructors. As for the duration and frequency of each session, I think once a week for about an hour is just right. It's appropriate because if someone finishes work and then has to study for several hours, it might be too much for them. So, I believe keeping it to no more than an hour per session is ideal. Regarding who will teach, it could be either a foreign teacher or a Thai teacher, depending on what the learners want to study.

Director 2

Interviewer: Do you agree with the findings regarding the challenges, professional needs, and the want to develop English language skills among researchers at TISTR?

Director 2: If we look at the summary from the questionnaire, it makes sense that reading seems to be the most crucial skill for researchers. They often need to read papers for their work. For writing, it actually goes hand in hand, but the thing is, writing might not be used as frequently. For example, let's say you read about 50 papers, but when it comes to actually writing, it might be just one project. Also, nowadays, there are many tools to assist with writing, like AI, if you know how to use them. When it comes to listening and speaking, if we compare the two, it seems like they prioritize listening more. This makes sense because during meetings, for example, when there are international guests visiting our workplace, our researchers must come in to observe and listen attentively. The opportunity for them to speak might not be as frequent because typically, speaking roles are held by managers. Researchers might speak when presenting their work or answering questions, which are more like their personal tasks. But when it comes to the organization, it's the opposite. If we compare between listening and speaking, the organization prefers speaking skills more. Sometimes, we don't want to be the only ones speaking, especially if there are followers or those who follow managers who can communicate. Having these skills would be beneficial. So, in terms of the organization's needs, the preferences seem to be reversed. It seems like when it comes to writing, we want people who can write well because the more they can write, the more papers or outputs we'll have. So, if someone can write effectively, it means there will be more outputs, which can lighten our workload. But nowadays, there are many tools available for writing, even within the research department. We even teach our colleagues to use tools like Chat GPT, which can save us a lot of time. I think if researchers themselves know how to use these assistance tools, it can greatly help with writing. Based on the survey of professional needs, I think it's true. Listening involves meetings, while speaking is mainly during academic conferences. Reading papers and writing their own works.

Interviewer: Do you think there should be training sessions? If yes, what format or specific skills do you think should be emphasized?

Director 2: Regarding training, the international relations division has previously organized individual English training sessions in the evenings. However, it turned out that there were no researchers attending, mostly just support staff. This was quite confusing. At that time, the promotion was done through various channels, and the sessions were not long, about 15-20 minutes. This was because we knew that for people who don't often use English, longer sessions might feel too pressured for them. We had scheduled appointments for the training sessions, focusing on conversation. For example, if they had any specific topics in mind, they were encouraged to prepare them. However, it turned out that the attendees were mostly from the management group. I wasn't sure what kind of training the researchers really wanted. However, for the past 3-4 years, we've organized similar sessions, but eventually, those groups disbanded. It could be due to being busy or perhaps it wasn't convenient for them. If you ask me, what's really necessary is listening and speaking. Reading and writing still have time for practice. As for the timing of the training, if you ask the instructor, they probably have time after work. Even the learners themselves would probably prefer not to disturb anyone's work hours. As for the duration of the training, I think once a week is good, but two hours per session might be too much. Even the learners themselves might not be able to handle more than an hour. As for the instructor, whether they are Thai or foreign, it's fine either way. Actually, in the beginning, a Thai instructor might be better because if we encounter any difficulties, we can ask them. Foreign instructors might be at an intermediate level. So, it should be something like this. The online training format is good, especially during the time after work. The best scenario would be face-to-face, but the instructor must have the skill to ensure that learners don't feel stressed or pressured. I agree that training should focus on listening and speaking first because these are skills that need immediate application, and they also contribute to one's image. Some people may be good at reading and writing, but if their listening and speaking skills are not fluent, their image may suffer. While there are many tools available now for reading and writing, there isn't much to help with listening and speaking. So, we should address this first.

Director 3

Interviewer: Do you agree with the findings regarding the challenges, professional needs, and the want to develop English language skills among researchers at TISTR?

Director 3: Agreeing with the responses from each researcher to the questionnaire, as it reflects their work. They would know what obstacles or challenges they face. Regarding speaking skills, some researchers may not use them extensively, such as answering phone calls or conversing with foreigners, so they might not perceive them as challenges because they don't use them much. However, in situations where English speaking skills are utilized, such as coordinating to make Memorandums of Understanding (MOUs), every skill becomes necessary for researchers' work.

Interviewer: Do you think there should be training sessions? If yes, what format or specific skills do you think should be emphasized?

Director 3: Agreeing that training in all four English language skills is necessary for all work aspects. It should start with laying the groundwork on English language structure. From my perspective, speaking skills are relatively challenging to develop if one doesn't understand the language structure, vocabulary, or lacks practice. Therefore, to improve, one must immerse oneself in English as much as possible. I agree that one hour is suitable. Learning once or twice a week is also fine. These skills depend on consistency and frequent use. If learned but not utilized, they are not beneficial. Regarding instructors, there are competent English language staff within the organization. They could take turns teaching or, for speaking practice, foreigners could be brought in to encourage interaction and familiarity. So, it could be either Thai or foreign instructors.

Director 4

Interviewer: Do you agree with the findings regarding the challenges, professional needs, and the want to develop English language skills among researchers at TISTR?

Director 4: So, if we look at it based on the education level, based on percentages, people with doctoral degrees should be around 39%. That's a significant percentage, so it might not have obstacles or challenges related to English language proficiency. Because in our sample group, almost 40% have doctoral degrees. Or if we include master's and doctoral degrees, excluding bachelor's degrees, then these two combined make up 90%. To delve deeper, we would need to ask whether their degrees were obtained domestically or internationally. This would allow us to analyze whether what they perceive as no obstacles might be because they completed their education abroad or not.

Interviewer: Do you agree that reading and listening skills are essential for researchers?

Director 4: So, I agree with that. As a researcher, reading comes first because whether it's writing project proposals or publishing, it's crucial to read extensively. Listening is also essential, especially when participating in international conferences where English is predominantly used. There's more opportunity to listen than to speak or write in such contexts.

Interviewer: Do you think there should be training sessions? If yes, what format or specific skills do you think should be emphasized?

Director 4: So, when it comes to reading and listening skills, they feel quite comfortable because they've had plenty of practice. But skills they feel lacking is in speaking and writing. That's why they're eager to develop those areas. In terms of training, it's more of a personal skill development journey rather than something the organization must provide. It's about taking initiative and seeking out opportunities for self-improvement, whether through external training or further education. Ultimately, each individual needs to pursue the skills that best suit them.

Director 5

Interviewer: Do you agree with the findings regarding the challenges, professional needs, and the want to develop English language skills among researchers at TISTR?

Director 5: From the responses of the researchers to the questionnaire, they may have indicated that it's not a problem, but overall, I still see it as a challenge for researchers. Sometimes, English proficiency isn't just about reading. The reason they prioritize reading may be because they often have to read papers, so they perceive it as reading. However, at the same time, they also need to be able to write. Our center offers services where clients can request reports in English, so we often have to check and correct reports. Therefore, I believe writing is another important aspect. Whether presenting work at an international level, poster presentation, or any oral presentation, you need writing skills. For posters, you need to write accurately; otherwise, you'll have to keep revising. Writing is another crucial aspect to consider. Moving on to the topic of speaking, nowadays, we have to communicate internationally, and that can be a challenge. For example, oral presentations can still be problematic. I think it's still a challenge. I don't know which group the data came from, but even if some groups don't use English much, I still think it's a problem because all skills are necessary for everyone. Listening is another important aspect. Misinterpretation can also be an issue. Nowadays, when we have meetings, we often have to meet with people from different countries. We have many MOUs with foreign entities. We need to speak, listen, and write effectively. When writing MOUs, we need to be clear about our proposals. In reality, it's not just about one skill but all of them are essential.

Interviewer: Usually, when we need to create an MOU with foreign parties, we typically draft the agreement ourselves or the International Relations Division handles it?

Director 5: We need to provide the International Relations Division with concepts of cooperation we wish to pursue. While they draft the agreement, they usually send it back to us for review to ensure accuracy. However, if we cannot read it, there might be a misunderstanding in what we proposed, as their understanding may differ from ours due to their different responsibilities. If we receive the draft back and cannot understand it, there's a risk that the MOU may not serve its intended purpose.

Interviewer: In terms of challenges, do you think researchers still face obstacles or challenges in all four skills?

Director 5: Yes, but when the survey results come out, it's still confusing why the scores are different. Because in reality, writing must go hand in hand with reading. It means we no need to write reports in English, right? Even if it's just reports in the country, we still have to write an abstract in English. If we can't write, will they understand it? Because the abstract is an overview of our work. If we can't write it, we lose the overview of our work. So, necessity isn't just about reading. I don't think speaking may be used a lot, but in the case that you're a researcher, I think all four skills are necessary because nowadays, we don't work alone. There are many tasks, such as testing various things. We have to meet international standards. We have to understand their criteria because sometimes the inspectors come from abroad. If you don't understand or communicate well, can you correct it according to the feedback they give you? This is necessary during work. Because in our center, we have experiments on animals, which require international certification. And we received international standards from America. The inspectors who come to inspect us are all foreigners. So, if we can't speak to them, don't understand them, can't write, or can't read the feedback they give us, we can't correct anything. Then how can we meet the standards? This is straightforward work. I think all four skills are necessary, not just one aspect.

Interviewer: Do you think there should be training sessions? If yes, what format or specific skills do you think should be emphasized?

Director 5: Overall, I think it would be good to have development training if the organization has the funding for it. However, from another perspective, if there are training courses but people don't attend or don't take them seriously, because some might find English boring or difficult, then it might seem like the organization is wasting resources. We don't know how many people are genuinely interested in learning. Is it beneficial? Well, it depends on the individual. For organizations, sometimes when selecting employees, they may need to consider this aspect. Has the person lacked these skills before? And now, are they becoming a burden to the organization that needs training? It's not necessarily a bad thing, but if the organization decides to provide training, it should carefully survey and ensure that those who attend are genuinely

interested and committed. There should also be proper evaluation to see if the organization's resources are being utilized effectively.

Each individual has different backgrounds, and at this stage, it can be challenging to change behaviors. It requires a change in mindset and behavior.

Director 6

Interviewer: Do you agree with the findings regarding the challenges, professional needs, and the want to develop English language skills among researchers at TISTR?

Director 6: So, for research scientists, they may not use English language extensively because they don't have to write English papers or give presentations in English. However, among those who responded to the questionnaire, there are only a few senior researchers because at that level, all four language skills are required. As senior researchers progress, they need to write papers in English and present in English. Some researchers from abroad who come to our institution also need to be able to speak and present in English. In terms of the professional needs of English language in the workplace, I see it as essential for all skills.

Interviewer: Do you think there should be training sessions? If yes, what format or specific skills do you think should be emphasized?

Director 6: Indeed, when it comes to reading, all of these skills can be self-taught. Reading and listening require frequent practice because English is a skill that needs to be used regularly. We can practice by watching movies, reading English newspapers, or anything else we enjoy. I agree that training in speaking and writing is necessary because while reading and listening can be self-taught, writing requires someone to check it, especially for grammar-related issues. As for speaking, it needs someone to practice with. Regarding the time frame, once a week seems fine to avoid disrupting work schedules, and having both online and onsite learning options would be convenient. Focusing on training for presenting work could also be beneficial. In terms of speaking, it might be beneficial to have foreign instructors to help with teaching because they can also provide presentation practice. As for writing, having Thai instructors might be better understood since there are many details involved.

BIOGRAPHY

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