

PROFESSIONAL ENGLISH ORAL COMMUNICATION NEEDS

FOR THAI FOOD ENGINEERING STUDENTS

ความต้องการการพูดสื่อสารทางวิชาชีพสำหรับนักศึกษาวิศวกรรมอาหาร

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Abstract

The current research examined the importance of professional English oral communication (PEOC) skills for Food Engineering (FE) students, FE stakeholders' perceptions on food engineering graduates' readiness of using PEOC skills, and needed PEOC skills for FE students who study English as a foreign language in Thailand. In order to identify PEOC skills used for designing PEOC courses for food engineering students, two research instruments for needs analysis consisting of 1) an interview protocol and 2) a needs analysis questionnaire were used. The interviews were conducted with 20 FE stakeholders in order to elicit information related to English oral communication (EOC) skills used by food engineers in their workplaces and to investigate FE graduates' problems when using EOC skills at work. The needs analysis questionnaire was constructed based on the results from the interviews with 20 FE stakeholders and was completed by 160 fourth-year FE students from four public universities in order to gain the students' perspectives on their readiness for using PEOC skills, their self-assessment on PEOC skills and their wants in developing PEOC skills. However, in order to provide the comprehensive data on PEOC skills needed for FE students, this research article presents only the qualitative results of the interviews with FE stakeholders, which could be followed by the quantitative results in the next research article. Based on the results of the needs analysis process, three PEOC courses for FE students were proposed to bridge the gap between students' current and expected PEOC skills. This article also responds to the increasing demand for designing and implementing PEOC courses for FE students.

Keywords: English Oral Communication; Professional English Oral Communication (PEOC); Needs analysis; Professional English Oral Communication Course (PEOC Course) for food engineering students; engineering students

บทคัดย่อ

งานวิจัยนี้ศึกษาความสำคัญของการสื่อสารการพูดภาษาอังกฤษในวิชาชีพสำหรับนักศึกษาวิศวกรรมอาหาร ทัศนะและมุ่งมองความคิดของผู้มีส่วนเกี่ยวข้องในด้านวิศวกรรมอาหารเกี่ยวกับความพร้อมในการสื่อสารการพูดภาษาอังกฤษในวิชาชีพของบัณฑิตวิศวกรรมอาหารและทัศนะและมุ่งมองความคิดของนักศึกษาวิศวกรรมอาหารในด้านความพร้อมในทักษะการสื่อสารการพูดภาษาอังกฤษของตนเองรวมทั้งการสืบค้นความต้องการการสื่อสารการพูดภาษาอังกฤษในวิชาชีพ สำหรับนักศึกษาวิศวกรรมอาหารผู้ซึ่งศึกษาภาษาอังกฤษเป็นภาษาต่างประเทศในประเทศไทย เพื่อได้มาซึ่งภาษาเป้าหมายของทักษะการสื่อสารการพูดภาษาอังกฤษซึ่งถูกนำมาใช้เพื่อการออกแบบหลักสูตรรายวิชาการสื่อสารการพูดภาษาอังกฤษเพื่ออาชีพ เครื่องมือวิจัยประกอบด้วย 1) แบบสัมภาษณ์ 2) แบบสอบถามเพื่อวิเคราะห์ความต้องการ ผู้วิจัยได้วิเคราะห์ความต้องการโดยการสัมภาษณ์ผู้มีส่วนเกี่ยวข้องด้านวิศวกรรมอาหารจำนวน 20 ท่าน เพื่อได้มาซึ่งรายการลำดับทักษะที่ต้องการในด้านการสื่อสารการพูดที่ถูกใช้โดยวิศวกรอาหารในที่ทำงาน และปัญหาที่เกิดขึ้น ระหว่างการสื่อสารการพูดภาษาอังกฤษในที่ทำงาน จากนั้นผู้วิจัยได้สร้างแบบสอบถามจากผลการตอบสัมภาษณ์ด้านทักษะการสื่อสารการพูดภาษาอังกฤษที่ต้องการของผู้มีส่วนเกี่ยวข้องด้านวิศวกรรมอาหาร จากนั้นแบบสอบถามได้ถูกนำมาใช้กับนักศึกษาวิศวกรรมอาหารชั้นปีที่ 4 จำนวน 160 คน จากมหาวิทยาลัยของรัฐจำนวน 4 แห่ง เพื่อที่จะได้มาซึ่งทัศนะและมุ่งมองความคิดของนักศึกษาวิศวกรรมอาหารในด้านความพร้อมในการใช้ทักษะการสื่อสารการพูดภาษาอังกฤษในวิชาชีพ ด้านการประเมินตนเองในด้านความสามารถ ด้านการสื่อสาร การพูดภาษาอังกฤษในวิชาชีพ และความต้องการในการพัฒนาทักษะด้านการสื่อสาร การพูดในวิชาชีพของนักศึกษา อย่างไรก็ตามบทความวิจัยนี้ได้มุ่งเน้นการนำเสนอผลการวิเคราะห์ความต้องการในเชิงคุณภาพเพื่อนำเสนอข้อมูลที่ครอบคลุมประเด็น ในส่วนของผลการวิจัยในเชิงปริมาณ จากแบบสอบถามนั้นจะได้นำเสนอต่อไปในวิจัยในลำดับต่อไป ผู้วิจัยได้เสนอ 3 รายวิชาของการสื่อสารการพูดในวิชาชีพ สำหรับนักศึกษาวิศวกรรมอาหาร เพื่อปิดช่องว่างระหว่างความสามารถด้านการสื่อสารการพูดภาษาอังกฤษในวิชาชีพในปัจจุบันของนักศึกษาด้านความคาดหวังในการสื่อสารการพูดภาษาอังกฤษของนักศึกษา บทความวิจัยนี้ตอบสนองต่อความต้องการที่เพิ่มมากขึ้นในการออกแบบและการจัดสอนรายวิชาการสื่อสารการพูดภาษาอังกฤษในวิชาชีพสำหรับนักศึกษาวิศวกรรมอาหาร

คำสำคัญ: การสื่อสารการพูดภาษาอังกฤษ การพูดสื่อสารภาษาอังกฤษทางวิชาชีพ การวิเคราะห์ความต้องการ รายวิชาการพูดสื่อสารภาษาอังกฤษทางวิชาชีพ นักศึกษาวิศวกรรมอาหาร นักศึกษาวิศวกรรม

1. INTRODUCTION

As Thailand has promoted its status as the “World Kitchen”, food companies attempt to level up themselves to produce high quality and high standard of food for both national and international demands (Thailand Board of Investment, [1]). Moreover, many international firms and their collaborating teams move their production lines to Thailand to coordinate the efforts of developing and innovating the best quality of food products together. Thus, more personnel including food engineers who are proficient in engineering knowledge, principles and professional English communication (PEOC) skills are required. A number of national as well as international corporates prefer food engineers who are able to communicate and convey the information related to food engineering work to their bosses, supervisors, managers, management teams, colleagues and suppliers in the context of multinational food organizations. With the aforementioned reasons, food engineering graduates should be equipped with PEOC skills.

However, based on Cowling [2], many research studies agree that reinforcing engineers who are non-native English speakers to be able to communicate in English, especially in oral communication skills is found to be one of the greatest challenges and difficulties, especially for food engineers. Furthermore, most of the English courses focus on four integrated skills of general English, namely listening, speaking, writing, and reading, which do not truly help FE students foster their PEOC skills. These PEOC skills are considered important for FE students’ future careers. Therefore, it is obvious that there is a mismatch between the current English courses and the PEOC skills required for FE workplaces. Furthermore, from the review of the related literature, it was found out that there is not much published research on PEOC needs for developing

PEOC courses for EFL Thai food engineering students. Due to this research gap and the lack of PEOC courses, it is crucial to identify the needs of PEOC skills for food engineering students which will be used for PEOC course development to enhance the development of PEOC skills for FE students in the next step.

2. RESEARCH QUESTIONS

1. How important are PEOC skills for food engineers?
2. What are the perceptions on FE graduates' readiness for PEOC skills to work as a food engineer?
3. What are the PEOC skills needed for food engineering students?

3. LITERATURE REVIEW

Needs Analysis

In order to investigate PEOC needs for FE students, the researcher reviewed the main principles for doing needs analysis, namely needs analysis and the principles of using multiple sources of information for conducting needs analysis, the theoretical framework for doing needs analysis, and the main cores of English oral communication skills.

Based on West [3], needs analysis involves studying the foreign language of the target situation and studying the methods of mastering that target language. West [3], and Hutchinson and Waters [4] add that there are two main points of needs analysis. The first main point is that needs analysis is used for the purpose of establishing the goals and objectives of the course. The second point is that conducting needs analysis involves the study of the target language needs in terms of necessities, lacks and wants of the learners, including the use of two widely accepted frameworks for needs analysis: a target situation needs analysis framework and a framework for analyzing learning needs. Furthermore, Dudley-Evans and St. John [5] propose a current concept of needs analysis in English for Specific Purposes (ESP) which consists of target situation analysis, personal information about the learners, present situation analysis, the learners' lack of PEOC skills, language learning information about the learners, and linguistic analysis, learner's expectation, and information about learners' environment.

Multiple Sources of Information for Conducting Needs analysis

According to Richterich and Chancerel [6], Long [7], and Kaewpet [8], using multiple sources of information for conducting a needs analysis is recommended when investigating complex needs. It can contribute to validating the data and increasing the quality of the information, and it is the important aspect of needs analysis process focusing on specific English needs of the skills that are directly related to working adults' jobs [10]. In addition, Richterich and Chancerel [6], and Kaewpet [8] point out that when identifying needs, the researcher should interpret needs analysis results from a variety of perspectives of the stakeholders who are involved in the target language situations and learner situations.

Long [7] proposes how to collect data in the needs analysis process by utilizing the multiple sources of information and methods. Based on Long [9], multiple sources of information can be derived from the group of 'insiders' and 'outsiders' consisting of published and unpublished literature, students, teachers, applied linguists and domain experts. The main methods for collecting the data of needs analysis can be qualitative

and quantitative methods comprising interview, questionnaire survey, experts' intuition and non-experts' intuition.

In this study, the key stakeholders who were involved in the target language situation include insiders (FE employers or FE managers, FE operational engineers, and FE graduates), and outsiders (FE teachers and ESP teachers, and FE students). FE employers, FE operational engineers and FE engineering graduates can provide the information related to PEOC skills at workplace for food engineering students while FE teachers and ESP teachers can explain the learning situations for PEOC skills.

The Main Cores of English Oral Communication in the Workplace

To identify PEOC skills needed for PEOC courses for FE students, the following English oral communication skills proposed by the prominent scholars were reviewed and studied in order to include them in the interview form for FE stakeholders who were required to select and identify PEOC skills for FE students from the list of general English oral communication (EOC) skills provided. Table 1 shows the list of general EOC skills in the workplace.

Table 1: The List of English Oral Communication (EOC) Skills at Workplace

Maes et al.[9]	Kaewpet [8]	Holden[10] cited in Dudley-Evan and St. John[11]
Listening skills	Delivering an oral presentation	Giving a presentation
Conversational skills	Attending meeting and seminars	Negotiating
Giving feedback	Attending to an occasional visit	Telephoning
Meeting skills, and training and interviewing skills	Talking about everyday tasks and duties	Taking part in meetings, trade shows and overseas training
Presentation skills	Talking in a daily life situation	Entertaining clients or colleagues
Handling customer complaints	Receiving spoken instructions	Explaining technical processes
Negotiation skills	Listening in an international seminar	Conducting tour of facilities
Taking customer orders and persuading skills	Applying for a Job	Making sales calls

In this study, eight spoken English oral communication skills proposed by Maes et al [9], Kaewpet [8] Holden [10] cited in Dudley-Evan and St. John [11] and Pattanapichet and Chinokul[12] were selected, adapted and incorporated in the interview form for FE stakeholders who are required to identify PEOC skills for food engineers from these EOC skills because they are the main cores of EOC skills covering three tracks of EOC sub-skills, namely EOC for Academic English, EOC for socializing and EOC for work ,which can be used to construct the needs analysis questionnaires for FE students.

The Model of Needs Analysis

The framework of needs analysis comprising a target situation analysis framework and a framework for analyzing learning needs proposed by Hutchinson and Waters [4] were selected and utilized to conduct the needs analysis of PEOC needs for FE students because with the following questions of these two frameworks, the researcher can use them to identify both target situation language and the students' needs in PEOC skills.

4. RESEARCH METHODOLOGY

In this research article, the main focus is the explanation of the qualitative results of the needs analysis process. The needs analysis process consisting of two stages is explained as follows. The first stage is conducting the semi-structured interview with food engineering stakeholders.

The objective of the interview is to gather in-depth information regarding the needed language skills in EOC in the workplaces for food engineers. The results from the interviews consist of the information about 1) the roles and importance of PEOC skills for FE students, 2) the perceptions on FE graduates' readiness for PEOC skills to work as food engineers and FE graduates' problems while using PEOC skills, 3) PEOC skills needed by FE stakeholders, and 4) the types of PEOC courses needed to offer to FE students.

The second stage, which is explained in details in the full research study, is constructing a set of questionnaire from the interview results and conducting the needs analysis questionnaires with the FE students. The following part presents how the semi-structured interview was conducted with food engineering stakeholders.

Data collection

The Participants: The food engineering stakeholders for the semi-structure interviews

In this study, in order to investigate PEOC needs for Thai food engineering students, 20 FE stakeholders consisting of insiders and outsiders were selected. The information on the participants is shown in the following table.

Table 2: The food engineering stakeholders for the semi-structured interviews

Insiders	The selection
1FE manager, 1 Food engineer, 1 FE graduate	From a company producing dairy food products
1FE manager, 1 Food engineer, 1 FE graduate	From a company producing animal or livestock products
1FE manager, 1 Food engineer, 1 FE graduate	From a company producing fruit and vegetable products
1FE manager, 1 Food engineer, 1 FE graduate	From a company producing other processed food products
Outsiders	The selection
1 FE teacher and 1 ESP teacher	Public University 1
1 FE teacher and 1 ESP teacher	Public University 2
1 FE teacher and 1 ESP teacher	Public University 3
1 FE teacher and 1 ESP teacher	Public University 4

The Research Instruments

The semi-structured interview based on the framework of target situation analysis proposed by Hutchinson and Water [4] including the list of EOC skills was constructed, validated and conducted with 20 FE stakeholders in order to gain the information about the PEOC skills for FE students. Based on Cresswell [13], with the semi-structured interview, the researcher can vary the question sequence, ask further questions, and allow the FE stakeholders to respond freely and openly. Before the actual use, the content of the interview form was validated by three experts and tried out with one managerial food engineer, one food operational engineer, one FE graduates, one ESP teacher, one food operational engineer, one food engineering graduate, one ESP teacher, and one FE teacher. The interview form comprised two main open-ended interview questions. All of the FE stakeholders answered Question 1, which was related to PEOC skills for food engineers. Question 2, which was asked about the tasks that food engineers need to do, was answered by managerial food engineers, operational food engineers, and FE graduates.

Data Collection procedure and Data Analysis

Twenty FE stakeholders were interviewed one after the other by telephone because they were geographically dispersed and they were not able to come to the central location for an interview [13]. It took about 30 minutes for each interview with each FE stakeholder. The researcher conducted the interview in Thai with sixteen Thai FE stakeholders and in English with one managerial Swiss engineer, one German managerial engineer and two managerial Japanese food engineers. The interviews were recorded, transcribed, categorized and reported. Later, a list of PEOC skills from the telephone interview was incorporated in the needs analysis questionnaire for collecting data from FE students in the next stage.

5. FINDINGS

This section presents the important findings focusing on the qualitative part of needs analysis process which can answer three research questions.

Research question 1: How important is professional English oral communication skills for food engineers?

All of 20 food engineering stakeholders provided similar answers, and they agreed that PEOC is very important for food engineers who have to coordinate and communicate with foreign bosses and multinational collaboration teams. Food engineers have to communicate about the principles of food engineering design, systems, process and operations to the suppliers and customers. Two of food engineering stakeholders (FES) explained that:

FES : Professional English Oral Communication is one of the most important skills for food engineers in our company because our company is based in Germany and the executive teams from Germany have the meeting with Thai executives in order to discuss and update everything in order to maintain and improve the standard and quality of our products. Food engineers are one group of engineers who have to discuss the problems to find the ways to solve the problems related to food engineering process, procedures and food engineering machinery with other engineers such as mechanical engineers and electrical engineers.

Moreover, all food engineering stakeholders agreed that food engineers in Thailand require the effective PEOC skills because their professions are directly related to communicating the information on the principles of food safety procedures and on food engineering techniques, devices and machinery. One food engineering stakeholder emphasized that Professional English Oral Communication skills are very important for food engineers because they are process engineers who have to work with collaborating teams of engineers from the overseas headquarters. One food engineering stakeholder emphasized that:

FES : Professional English Oral Communication is very important for food engineers because they are the process engineers and have to work with the collaborating team of engineers from the overseas headquarters, they have to be able to clearly communicate in English with others and they have to control the factors affecting the procedures of producing the products. If they cannot explain the procedures in English clearly and the collaborating teams don't understand or misunderstand their messages, it will cause danger in producing process for food safety.

Furthermore, they have to be able to clearly communicate in English with others and to control the factors affecting the production process. If food engineers are not be able to explain FE procedures in English clearly, the collaborating teams will not understand or misunderstand their messages, and it will cause

dangers in FE production process for food safety. As a result, it is obvious that PEOC skills are one of the most important skills for food engineers.

Research question 2: What are the perceptions on food engineering graduates' readiness for professional English Oral Communication skills?

According to the interviews with 20 FE stakeholders, all of the FE stakeholders were concerned that FE graduates are not ready for PEOC skills in the workplace. They also indicated that food engineering graduates appeared to have many problems in using PEOC skills in the workplace. When all FE stakeholders were asked further about the main problems related to the unreadiness of FE graduates to use PEOC skills in the workplace, the insiders in this study or the groups of food managerial engineers, food operational engineers and FE graduates expressed similar opinions that the main problems of FE graduates' PEOC skills are 'Giving a formal presentation in front of the management team in the meeting room'. They added that food engineering graduates are still not be able to deliver the messages clearly and professionally, and they need to improve the good pronunciation and presentation skills. Furthermore, most FE graduates had difficulty in asking and answering the complicated questions both during the presentation and in work-related discussions. FE stakeholders suggested that the teacher should provide a course of English for presentation with a focus on FE contents, including the practice of asking and answering questions at the end of the presentation in order to develop their professional presentation skills. Interestingly, the groups of insiders provided similar answers indicating that FE graduates have a good command of knowledge and skills in food engineering work, but they are not able to convey and explain complicated food engineering processes and operations in their communicative events. Apparently, the insiders groups tended to consider that FE graduates lacked fluency when they share their ideas with other foreign collaborating teams. The majority of FE stakeholders considered that in PEOC courses, the teacher should organize more class activities of whole-class discussion, large-class discussion and small-class discussion which would lead to the practice of asking and answering various kinds of questions about FE technology, FE principles for food safety and best quality of food.

When asked about social interaction and the use of exchanging general and corporate cultures, FE stakeholders stated that FE graduates did not seem to have the problems of intercultural communication when they contact and coordinate their work with multicultural suppliers and customers in the workplaces but most of FE graduates were not familiar with multinational English accents and pronunciation. The group of insiders explained that the least problematic PEOC skill of FE graduates is everyday conversations as they can greet and use small talks with bosses, colleagues, foreign suppliers and customers. Nevertheless, they did not have speaking fluency and accuracy when receiving and entertaining foreign visitors. However, they did not seem to have the problems of using technical terms of food engineering when they work with foreign suppliers and customers. For example, they were able to use the specialized terms of food engineering when they contact with the suppliers and do procurements for FE machinery and equipment. Nevertheless, to enhance social interaction skills and PEOC skills, the groups of FE teachers and ESP teachers suggested organizing English Day of FE community in PEOC courses for FE students. This can help promote the activities of speaking and listening English in the target language situations.

Research question 3: What are the professional English oral communication skills needed for food engineering students to work as food engineers?

Based on the interviews with 20 food engineering stakeholders, a list of professional English oral communication skills selected by food engineering stakeholders was proposed. The skills are ranked according to FE stakeholders' ratings. They are as follows:

Table 4: Professional English Oral Communication Skills Needed for Food Engineering students

Rank	Listening Skills	Rank	Speaking Skills
1.	<p>Catch the following</p> <p>1. :the English-speaking managers & supervisors' instructions.</p> <p>2. :the information from general English conversation at workplace.</p> <p>3. :the main points from the presentation related to food engineering work</p> <p>4. :the information from the English discussion on food engineering work</p> <p>5. :the information obtained from food engineering suppliers and customers</p> <p>6. :the information from the discussion in seminar or academic conference related to food engineering work</p> <p>7. :the information in the meeting</p>	1.	<p>Communicate orally by using English for the following:</p> <p>1. - giving a presentation</p> <p>2. - using English for socializing</p> <p>3. -using English for food engineering work</p> <p>4. -using English for meeting</p> <p>5. -using English for negotiating</p> <p>6. - using English for other tasks related to food engineering work such as dealing with suppliers and customers.</p> <p>7. - using English for telephoning</p> <p>-using English for exchanging general and corporate cultures</p>

As shown in the above table, the majority of food engineering stakeholders select 'follow English-Speaking managers & supervisors' instructions' to be the first rank of listening skills and 'Can communicate orally by using English for giving a presentation' to be the first rank of speaking skills needed by the majority of food engineering stakeholders.

6. DISCUSSION AND RECOMMENDATION

Based on the findings from this research article, two main issues of the discussion are presented.

1. The Lack of Readiness in PEOC Skills of FE Graduates for the Real World of FE Industry

Based on the findings from the interview with food engineering stakeholders, it was found out that food engineering graduates' PEOC skills are still not highly proficient enough to communicate orally in the target situations. The main cause of unreadiness can be from the mismatch between the current course goals of English for Professional Communication focusing on general speaking and writing for all engineering fields and the current PEOC course needs in the real-world scenarios of food engineering work situations. It is recommended that firstly, ESP teachers should integrate the needs analysis process into the plan of course design for specific fields of engineering. Serafini et al [14] report that the needs analysis process, which is a preliminary requirement for developing an ESP program, has been paid little attention. As a result, students do not have ample opportunity to study and practice what they need to learn in order to cope with real-world food engineering target language situations. Thus, the incorporation of the English Oral Communication skills needs in course materials with food engineering contexts for food engineering students should be considered as the important concerns by English language teachers in order to prepare them for the authentic situations of the international community of food engineering industry. Secondly, the crucial point which is in line with the results from Kaewpet's [8] study is that there should be more professional English

oral communication courses provided for specific fields of engineering students in order to prepare them for real -world specific engineering target language. Thirdly, there should be cooperation between food engineering stakeholders and university's English language curriculum committee of the English language programme to get the support and promotion for constructing PEOC courses that meet the needs of national and multinational organizations [12].

2. Three Main Types of PEOC Abilities Required by FE Stakeholders to Have a Successful English Oral Communication abilities in Occupational Environment

Based on the findings of this research study, it was found out that FE graduates need three main types of PEOC skills to work and communicate in their workplaces. These three types of PEOC skills consist of everyday informal English used with co-workers and friends, academic English used with executives, suppliers, customers, collaborating teams and English for work with the specific focus of food engineering work. Furthermore, when comparing these 15 skills with the EOC skills proposed by Maes et al [9], Kaewpet [8] and Holden [10], it revealed that 'using English for other tasks to deal with suppliers and customers' and 'catching information obtained from suppliers and customers' are the specific skills needed only by food engineers and food engineering students. The plausible reason of these two needed skills can be supported by the information from National Centre of Excellence for Food Engineering, Sheffield Hallam University that the job responsibility of food engineers is to procure food engineering machinery and equipment from the suppliers in order to increase the productivity of best quality of food, which is the increasing demand of customers. In addition, the results of the interviews with food engineering stakeholders are also consistent with the principles of three abilities crucial for students to have successful PEOC skills in occupational contexts proposed by Gatehouse [15]. These three main abilities comprise 1) the ability to use the specialized technical terms of specific types of workplaces; 2) the ability to use language expressions for academic English, and 3) the ability to use English for everyday conversation. Furthermore, as emphasized by Siritararatn [16], the integral parts of successful English oral communication ability consist of the ability to use English linguistic knowledge in social contexts and in working situations, including the ability to communicate for academic purposes such as giving oral presentation. Consequently, it is apparent and should be indicated that ESP curriculum developers and ESP teachers should be aware of the importance of providing specific courses focusing on PEOC needs with the highlight of three types of PEOC skills for FE students.

7. CONCLUSION

This study has provided an insight into PEOC needs for food engineering students who are required to work in national and multinational food companies and organizations based in Thailand. The findings of these 15 PEOC skills needed by FE stakeholders should be incorporated into the course design and course syllabus of new PEOC Courses for FE students of the research site, the Faculty of Engineering, KMITL, and these fifteen skills could also be used for Thai FE students who are expected to be food engineers equipped with PEOC skills. Apart from the fact that needs analysis should be emphasized as the main core of ESP course development before developing PEOC courses, it is essential to initiate the cooperation of developing the PEOC courses among graduate users, FE stakeholders, and the English curriculum developer of English language programmes in order to develop the PEOC courses in response to the real-world needs of FE industry.

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