

**TOWARDS A NEEDS AND SITUATION ANALYSIS MODEL FOR ESP COURSE  
DESIGN IN THE CAMBODIAN HIGHER EDUCATION CONTEXT**

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## ABSTRACT

The recent global economic exchange and business trade has led to the growth of English for Specific Purposes (ESP) courses in many Asian institutions. In Cambodia, there has been a similar demand for ESP courses in the higher education context, mainly triggered by the ASEAN economic integration in 2015, which introduced English as the working language of the ASEAN member countries (DHE, 2014b). Despite the increasing need for the development of such courses, only a limited number of courses have been developed within the country without any systematic needs or situation analysis. Moreover, there has been limited research in this ESP field, especially in the Cambodian higher education context, either on designing, or evaluating ESP courses (Basturkmen, 2010; Macalister, 2007; Macalister & Sou, 2006).

To address this gap, the current thesis aimed to develop a needs and situation analysis model to assist in the ESP course design in the Cambodian higher education context. The study is the first comprehensive large scale empirical research which analyses perceptions of both academic and industry stakeholders on the necessity of ESP course design, the ESP course content, scope, syllabus, challenges and measures needed for ESP course development.

A sequential explanatory mixed methods design, combining questionnaires and interviews, was employed in the current study (Creswell & Plano-Clark, 2011). The research constitutes a case study, focusing on a needs and situation analysis in the Faculty of Science at a Cambodian university. Three hundred and forty-one participants were recruited in the quantitative phase, thirty of which volunteered to be interviewed in the qualitative phase. Unlike previous research, which included either academic or industry stakeholders, this research combined both academic stakeholders, specifically undergraduate students, subject

lecturers and English lecturers, and industry stakeholders, consisting of employed university graduates and employers.

The findings confirm the stakeholders' support for ESP course design in the Cambodian context, thus supporting the 2014 initiatives of the Department of Higher Education. The results also demonstrate stakeholders' preferences for a narrow-angled ESP course for each specialisation within the Faculty. In addition, the study reveals that stakeholders preferred ESP courses to be a combination of English for Academic Purposes and English for Occupational Purposes to reflect the current academic and professional needs of students. The majority of stakeholders show a preference for these courses to be elective so as to match the students' interests and high study load. Several challenges are reported by the stakeholders, which comprise the Cambodian EFL students' low English proficiency, the lack of training for ESP teachers and challenges in designing materials appropriate for the context.

The current study provides a model for and offers recommendations for ESP course design in Science Faculties in the Cambodian higher education context. The findings and recommendations from this study can also be used in other tertiary institutions in Asia, with similar circumstances to Cambodia, especially those planning to develop an ESP course.

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## **LIST OF ABBREVIATION AND ACRONYMS**

ACC	Accreditation Committee of Cambodia
AEC	ASEAN Economic Community
ASEAN	Association of Southeast Asian Nations
AUN	ASEAN University Network
CBI	Content-Based Instruction
CBLT	Competency-Based Language Teaching
CLT	Communicative Language Teaching
DHE	Department of Higher Education
EAP	English for Academic Purposes
EFL	English as a Foreign Language
EGAP	English for General Academic Purposes
EGOP	English for General Occupational Purposes
EGPP	English for General Professional Purposes
ELT	English Language Teaching
EOP	English for Occupational Purposes
EPP	English for Professional Purposes



ESAP	English for Specific Academic Purposes
ESL	English as a Second Language
ESOP	English for Specific Academic Purposes
ESP	English for Specific Purposes
ESPP	English for Specific Professional Purposes
FoS	Faculty of Science
HREC	Human Research Ethics Committee
TOEFL iBT	Test of English as a Foreign Language Internet-based Test
IELTS	International English Language Testing System
ITC	Institute of Technology of Cambodia
LSP	Language for Specific Purposes
MoEYS	Ministry of Education, Youth and Sport
RUPP	Royal University of Phnom Penh
TBNA	Task-Based Needs Analysis
UC	University of Canberra
UHS	University of Health Sciences

# CHAPTER 1

## INTRODUCTION

This introductory chapter is divided into seven sections. Section 1.1 describes the background of the study by discussing foreign language teaching and issues affecting English Language Teaching (ELT) in the Cambodian higher education context, the context in which this research was conducted. Section 1.2 establishes the research interest area and the gap in research about English for specific purposes (ESP) is identified. Research into ESP and needs analysis in ESP course design in general, and also into the Cambodian higher education environment was undertaken in an attempt to reduce the size of this gap. Section 1.3 discusses the rationale and justification for the study, explaining how it helps expand the research in the field and thus lessen the gap. Section 1.4 explains the aims and the research questions of this study. Section 1.5 summarises the methodology used and Section 1.6 explains the significance of the study, especially showing how it contributes to theory and also practice. Finally, section 1.7 outlines the structure of the thesis: after the introduction is the literature review, methodology, quantitative and qualitative findings, discussion, and conclusion and recommendations.

### **1.1 Background of the study**

The context of the current study is ELT at the higher education level in Cambodia. To provide a good understanding of the context, this section sets out the principal historical factors affecting Foreign Language Teaching (FLT) and issues that currently affect ELT in Cambodian higher education.

### *1.1.1 Foreign Language Teaching in Cambodia*

Foreign language teaching in Cambodia has a long history that can be traced back to 1863.

Based on political, economic and social changes in the country, the history of foreign language as a formal reality can be categorised into five main periods: the French colonial period (1863-1953), the Independence period (1953 - 1975), the Khmer Rouge period (1975 - 1979), the Vietnamese occupation period (1979 - 1989) and contemporary Cambodia (1989 - the present).

Between 1863 and 1953, Cambodia was colonised by France so that the only foreign language taught in formal education during that period was French. According to Rany, Zain, and Jamil (2012), both general and higher education systems followed the French system. The general education system consisted of four-year primary, four-year lower secondary and three-year upper secondary schooling. Students who graduated from grade eleven could enrol into French universities in France and Vietnam: there was no higher education institution in Cambodia until the late 1940s. In 1949, in order to ensure that there were enough French-speaking Cambodian scholars to serve the colonial civil service, the French established the first Cambodian tertiary education institution, which they named the National Institute of Juridical, Political and Economic Science (S. Clayton, 2008; Rany et al., 2012).

On 9<sup>th</sup> November 1953, Cambodia gained independence from the French. Between 1953 and 1975, English effectively became the second foreign language in Cambodia. In particular, during the civil war 1970 and 1975, the Cambodian government or so-called Lon Nol government, depended largely on aid from the United States of America where English was the first language. In Cambodia, however, French was still the language of instruction in tertiary education and was the working language of the government (S. Clayton, 2008). In

addition, the main foreign language for international communication was French (T. Clayton, 1995).

After the five-year civil war ended on 17 April 1975, the Khmer Rouge regime toppled the Lon Nol government and led the country from then to 1979. During this period there was no formal education in Cambodia: that is, all schools and universities were closed. According to Chamnan and Ford (2004), during this time, around 75% of university lecturers and 96% of university students were killed. Sadly, there was no foreign language education in Cambodia between 1975 and 1979. T. Clayton (1998) points out that during the regime of the Khmer Rouge, all foreign languages were prohibited in order to isolate the country and avoid any influence from foreign ideologies.

On 7<sup>th</sup> January 1979, the Vietnamese troops conquered Cambodia. The period between 1979 and 1989 was named the Vietnamese occupation period (T. Clayton, 2002) and during this time, the country adopted the USSR's economic system, namely a centralised Soviet system based on socialist ideology time (T. Clayton, 2000). During this period the Vietnamese and Russian languages were taught in the Cambodian higher education system. Foreign language policies favoured Vietnamese and Russian languages, and the teaching of other foreign languages, especially Western languages such as English and French, was banned in order to control Cambodians' interactions with people from foreign countries (T. Clayton, 2002). Even though English language instruction was prohibited and tightly controlled, a study in 1985 by the Quaker Service Australia revealed that there was a very positive attitude among Cambodians towards learning English (S. Clayton, 2008).

In 1989 the Vietnamese troops withdrew from Cambodia. From 1989 to the present, there has been a strong demand for English and other foreign languages, including French and Chinese, to accommodate the political, social and economic changes taking place in Cambodia, and the

rehabilitation of the country (T. Clayton, 2002). Noticeably, today only French and English are the major foreign languages in the Cambodian formal education system and they are studied from primary through secondary education. However, among Cambodian students in secondary schools, English is the first choice between the two foreign languages (S. Clayton, 2008; T. Clayton, 2006; Saroeun, 2015). Foreign language instruction is offered in public schools: it is offered in grades 5 and 6 of primary school and is a compulsory subject between grades seven and twelve in secondary school education. Also, English instruction is offered by many private institutions from grade 1 (I'mACE, 2014; Mab, 2015). By the time students reach university they should, ideally, have reached the intermediate level of English proficiency. However, Saroeun (2015) argues that students' English proficiency varies from beginner to upper-intermediate levels after finishing grade 12, largely depending on where they had their education.

Article 30 of the Accreditation Committee of Cambodia (ACC) states that a foreign language subject shall be included in the university undergraduate foundation or year one program in addition to other subject areas, such as arts and humanities, mathematics, sciences and computer technology, and social sciences (ACC, 2003). Each of these subject areas, including the EFL subject, is worth at least 20% of the total credit required if a student is to receive a certificate at the end of the year one undergraduate program.

Although French and English are the two main foreign languages in the Cambodian education systems, English has evidently taken first place as the main foreign language and is now becoming the second language in Cambodia (Moore & Bounchan, 2010). Out of 103 public and private higher education institutions, only a few public universities, including the Institute of Technology of Cambodia and the University of Health Science, have been offering dual French and English language teaching (ITC, 2016; UHS, 2016). According to Chin & Gillette

(T. Clayton, 2002), the existence of French language instruction at these universities is due to sponsorship from the French government.

### *1.1.2 Issues affecting English Language Teaching in Cambodian higher education*

As mentioned in the previous section, English is the main foreign language, and to learn it is compulsory in Cambodian higher education. However, the Cambodian higher education system generally, and particularly English instruction continues to face several significant challenges.

First, despite the important role of English in the higher education sector, there is no clear expectation that English should be offered in the Cambodian higher education institutions (HEIs) and sometimes it is simply not offered at all. Although ACC's policy clearly states the inclusion of foreign language education, sometimes it is dependent on an HEI's available resources (T. Clayton, 2006; Moore & Bounchan, 2010; Saroeun, 2015). For example, foreign language policies have been affected by the conditions of the donor countries, which can be witnessed in the foreign language curricula of a few public (government-owned) universities. Consider the cases of the Institute of Technology of Cambodia and the University of Health Science, which receive technical support and funds from the French government and incorporate both French and English language instruction in their institutions. Another example is that English has been the only type of foreign language instruction implemented in the private (privately owned) institutions since the first private higher education institution was established in the 1990s.

Second, the structure of English language instruction has no uniformity among HEIs in Cambodia (DHE, 2014b). The length of English language instruction varies from two to six semesters, depending on the choices of each institution. The Cambodian Department of

Higher Education, or DHE (2014b) distinguishes between four Categories of university. Category A universities (e.g., Pannasastra University of Cambodia, Zaman University, Limkokwing University), which are the minority, provide bridging courses for students whose general English proficiency has not reached the university standard which is measured through the English entrance exam. While Category A universities are English medium universities, Category B universities (e.g., Royal University of Agriculture, International University, Institute of Technology of Cambodia) focus on teaching English for specific academic purposes more than general English; then, Category C universities (e.g., Royal University of Phnom Penh, Phnom Penh International University, Asia Euro University), which combine general English and general English for academic purposes, account for the majority among the four categories of university. Finally, Category D universities put more emphasis on building general English than academic English (DHE, 2014b). Based on the DHE's (2014b, p.19) report, "HEIs under this category are those who do not have strong management and administrative structure. They are purely profit-oriented, and do not have strong investment in full-time staff or lecturers" and they constitute a minority.

Third, the English language curriculum has not yet been properly developed in many higher education institutions in Cambodia. DHE (2014b) reports that the majority of universities, including many universities in Categories B, C and D, design their English language curriculum based on existing popular foreign textbooks. Only a few universities in Categories B and C have established a curriculum committee for the purpose of evaluating the English language syllabus periodically. Otherwise, many universities within the four categories have developed their English curriculum based on teachers' intuition and certainly not on research (Davis & Harden, 1999; I. S. P. Nation & Macalister, 2010; Richards, 2001, 2013). This study is among the very few that are based on empirical research and involves research into a needs analysis for ESP course design of a university in Category C that comprises the majority of

universities among the four categories in Cambodia. Thus, it is expected that this study has application to most HEIs in Cambodia because of the similarities in the problem they face: namely English language courses that lack any needs analysis.

Finally, there has been an absence of ESP courses in many universities, and those that currently have them do not follow a systematic and research-based approach in their course design. DHE (2014b) reports that the majority of Cambodian universities provide general English courses to their undergraduate students, but it is necessary for them to offer ESP courses, to better respond to students' needs. In addition, there have been recent initiatives from DHE to provide training and technical support as well as planning to develop some guidelines intended to assist HEIs with the design of the ESP courses which can complement the existing general English courses (DHE, 2014a, 2014b); however, the guideline development process is still in the consultation stage (personal communication, 13 October 2016). In practice, HEIs have been continuing to offer general English courses to their undergraduate students because, it has been reported, staff in many universities have limited capacity, heavy workloads and/or teaching schedules that prevent them from designing an ESP course which is based on research findings (DHE, 2014b; Korm, 2011).

The research reported here emerged from the need to develop a systematic needs analysis approach to assist HEIs in Cambodia in developing ESP courses which many of the ELT trained teachers can expect to be involved in. The findings and recommendations are expected to be helpful to the DHE in its attempt to develop a policy that assists HEIs in Cambodia in their ESP course design.

To summarise, a number of major issues currently affect Cambodian ELT in tertiary education, including an unclear policy on ELT, a non-uniform ELT curriculum, unsystematic ESP course design and limited published research applicable to ESP course design. The



current research addresses these issues by providing a comprehensive needs and situation analysis in an attempt to address the significant gap evident because of the limited research that has been carried out on Cambodian ELT, and to assist in the development of ESP courses.

## **1.2 Research interest area**

There is no doubt that English plays a crucial role in communication both as a lingua franca and language of formal communication around the globe. In regard to its role as a language of communication, English serves not only a lingua franca for Asia, but also an important language internationally (Al-Tamimi & Shuib, 2010; Kirkpatrick, 2010). English is the working language of the Association of Southeast Asian Nations (ASEAN) (Kirkpatrick, 2012). ASEAN is an organisation of ten South East Asian countries whose vision 2020 was to establish an ASEAN economic community (AEC) in 2015 (Secretariat, 2008). The core elements of AEC are to facilitate the free movement of goods, services, investment, capital and skilled labour around the ten member states. For this to be achieved, mastery of the English language is, without doubt, essential for students and professionals in the competitive regional, as well as global, job markets (Minh, 2013).

To meet the need to develop the specific English language skills required by learners and professionals, English for Specific Purposes (ESP) is called for: this is not, however, a new phenomenon. The Cambodian government and HEIs have begun the process of introducing ESP courses, but this is not being done systematically. According to Hutchinson and Waters (1987), ESP refers to an English teaching approach which is a direct response to the specific needs of students and the context. Throughout the 1950s, one of the main aims of ESP courses was to help equip ESL/EFL learners for study in American and British universities (Richards, 2001). More recently, ESP courses have come to be mainly developed to assist

specific groups of students who have already mastered general English to acquire the specific English language skills they need to use in professional, workplace or academic environments (Basturkmen, 2010). Hyland (2006) categorises ESP into two main branches: English for academic purposes (EAP) and English for occupational purposes (EOP). Examples of EAP include English for academic writing and English for law studies, while examples of EOP can be English for health science and English for hotel receptionists (Basturkmen, 2010; Clapham, 2000; Dudley-Evans & St John, 1998). Unlike other studies, which incorporate either EAP or EOP, the current study investigates students' needs in both ESP branches in order to provide a more holistic understanding of students' needs and to address the needs of a member nation of ASEAN.

To identify students' language needs in either academic and for professional contexts, it is crucial for course designers to conduct a needs analysis (Basturkmen, 2006, 2010; Dudley-Evans & St John, 1998; Graves, 2000; Hutchinson & Waters, 1987; A. M. Johns & Makalela, 2011; Long, 2005; I. S. P. Nation & Macalister, 2010; Richards, 2001). Basturkmen (2010) argues that a language course that responds to students' needs and is relevant to them will motivate and enable them to learn. A needs analysis approach is considered the first main step to any language program; however, as Graves (2000) maintains, needs analysis is, in fact, an ongoing process which can take place at any time in the course cycle because students' needs are dynamic and keep changing along the way. By involving relevant stakeholders in the process, needs analysis is able to identify learners' language needs and preferences in order to establish learning goals and a syllabus that are relevant to students' real world objectives and lead to the successful implementation of an ESP course (Markee, 1997).

Given the importance of needs analysis in ESP course design, research into this field has been widespread around the globe, especially in the last decade, and including in the field of

science. In the academic setting, a number of needs analysis research studies have been conducted for the purpose of assisting the design of EAP courses (e.g., Alastal & Shuib, 2012; Chia, Johnson, Chia, & Olive, 1999; Jackson, Meyer, & Parkinson, 2006; Smith & Thondlana, 2015). Needs analysis has also been conducted in the professional setting in order to support the design of EOP courses and assist them with responding to what students need (e.g., Boshier & Smalkoski, 2002; Bosuwon & Woodrow, 2009; Chew, 2005; R. Oliver, Grote, Rochecouste, & Exell, 2013; Vo, Wyatt, & McCullagh, 2016).

The aforementioned empirical research studies show that there is a significant role for needs analysis in language course design especially when there is an emphasis on ESP. Although the research in the ESP field is slowly growing, scholars have ascertained the need for more research in the field (Basturkmen, 2006, 2010).

In Cambodia, a limited amount of research in ELT, and in ESP in particular has been done. The two prominent research studies into needs analysis in ESP course design were published about a decade ago. First, Macalister and Sou (2006) sought perceptions from three groups of academic stakeholders about students' language needs in order to design an English elective course for students at an urban university. Second, Macalister (2007) introduced a negotiated syllabus in order to identify students' language needs at the Institute of Technology of Cambodia. The study sought perceptions from three academic stakeholder groups, including an engineering department head, an English teacher and students from five engineering disciplines. The two studies were both small-scale research projects that involved recruitment of a small number of academic stakeholders. The present study is the first comprehensive research undertaken, and involves a large number of participants; it investigates the views of both academic and industry stakeholders on the English language needs and preferences of

undergraduate students who are learning for the purposes of academic studies and future careers.

### **1.3 Rationale and justification of the study**

This section justifies why the study is worthy of investigation. Most importantly there is a discussion on how this research addresses the gaps that are evident in the ESP literature.

Despite the centrality of ESP and the vital role needs analysis plays in ESP course design around the world, there has been limited research in this field, particularly research that takes into account contextual and social issues. A specific intention for this study is that it fills some of this gap in empirical research on needs analysis and situation analysis so that appropriate objectives of an ESP course can be set out (Basturkmen, 2006, 2010). For example, in the Arab context (Abuklaish, 2014; Ghenghesh, Hamed, & Abdelfattah, 2011; Kandil, 2009) and Asia (Mazdayasna & Tahririan, 2008; Vo et al., 2016), many language researchers and practitioners have neglected to conduct needs analysis, in spite of its theoretically crucial role in ESP course design. Moreover, undertaking research into needs analysis before designing language courses is, in practice, widely absent in universities. For example, Vo et al. (2016) argue that there is a lack of research into workplace communication needs prior to or alongside the implementation of many courses in Vietnam. The aim with this study is to address this gap in ESP research by conducting a comprehensive needs analysis and situation analysis into English language skills for students at the tertiary undergraduate level.

Second, although research into needs analysis and ESP has been presented in the literature since the 1950s, most studies within the science domain have explored a single perspective – either language for the academic needs or for the professional needs of the learners. While

many studies have focused solely on academic language skills (see e.g., Alastal & Shuib, 2012; Atai & Shoja, 2011; Jackson et al., 2006; Macalister, 2007; Macalister & Sou, 2006; Smith & Thondlana, 2015), other studies have investigated only workplace language tasks for students (see e.g., Boshier & Smalkoski, 2002; Bosuwon & Woodrow, 2009; Chew, 2005; Crosling & Ward, 2002; Evans, 2012; R. Oliver et al., 2013; So-mui & Mead, 2000; Spence & Liu, 2012; Vo et al., 2016). That is, the studies have involved either academic or industry counterparts to identify skills and tasks for students. In the research reported here, both academic and industry stakeholders were recruited to obtain views from both sides in order to identify the required language skills for students' academic studies and their future careers.

Third, there are few needs analysis research studies that employ a mixed methods approach. Gollin-Kies, Hall, and Moore (2015) point out that mixed methods is an emerging research trend in the field of language for specific purposes. Noticeably, the majority of existing studies into needs analysis employed mainly quantitative methods (see e.g., Alastal & Shuib, 2012; Bosuwon & Woodrow, 2009; Chia et al., 1999; Crosling & Ward, 2002; Jackson et al., 2006) but only a few employed qualitative methods (see e.g., Evans, 2012; Vo et al., 2016). Quantitative research methods fail to provide in-depth understanding of a phenomenon, whereas qualitative methods meet a requirement for deep understanding, even though they lack the quality of generalisability. This study is a large-scale research project that uses an explanatory sequential mixed method approach combining quantitative and qualitative enquiry methods in order to obtain the advantages of both: that is, it is comprehensive, in-depth and achieves valid findings (Creswell, 2011, 2014; Creswell & Plano-Clark, 2011).

The fourth important motivation for this research emerged from the lack of ELT research generally, but particularly research on ESP in Cambodia. At present, the availability of research papers is limited and can hardly be found in the journals. A few articles about

Cambodian ELT are currently available in *Language Education in Asia* (e.g., Kea, Meng, & Keuk, 2015) and two ESP articles are in *Guidelines* (e.g., Macalister, 2007; Macalister & Sou, 2006). Only two research studies have so far been conducted in the Cambodian higher education context and they were based on the academic stakeholders' perspectives only (Macalister, 2007; Macalister & Sou, 2006). This study is the first comprehensive and large-scale needs and situation analysis research in Cambodia that has involved the recruitment of both academic and industry stakeholders.

Finally, in recent years Cambodia has experienced a shift from general English programs to a demand for ESP courses in light of recent global and regional demands for English. The demand for English usage has been expanding in both the public and private sectors in response to the expansion and a growing number of multinational companies and international nongovernmental organisations. Within the last decade, public and private universities have developed ESP courses within the country, but many of these have not been developed systematically and nor have they been based on informed needs analysis.

Additionally, a recommendation from a 2013 external quality review of the English language program of a Cambodian HEI in the Category C universities indicated that, in addition to the current English courses in the program, a design for ESP courses was needed in order to enable the students to gain specific English language skills and competencies in their specialisation (Macalister, 2013). This study attempts to address this gap by offering a model in needs and situation analysis to assist in the design of ESP courses in the context of Cambodian higher education.

#### **1.4 Aims and research questions of the study**

To help address the problem and also to contribute to the research gap in the field of ESP in general, and needs analysis in particular, in this study needs and situation analyses were

conducted in order to investigate the relevant stakeholders' perceptions about the academic and professional English language skills and competencies of undergraduate students, using the case study of the Faculty of Science in a Category C university. In particular, the study aimed to set out a needs analysis model that has the potential to be applied in ESP course design in Cambodia. From the findings of the research, recommendations are offered for HEIs in Cambodia and other countries too that have similar contexts.

To pursue to the aims of the current study, an overall research question was formed, and four sub questions were explored.

Overall research question:

- What are the professional and academic needs of Cambodian university students for the development of an appropriate and relevant ESP course?

Four sub questions:

1. What are the Cambodian academic and industry stakeholders' perceptions about the necessity for developing an ESP course for the undergraduate program in Cambodian HEIs?
2. What are their perceptions about the scope, duration and syllabus of the ESP course?
3. What are their perceptions about the undergraduate students' ESP needs?
4. What are their suggestions regarding the challenges and the measures needed to assist in the ESP course design?

The term course is employed in this thesis for the context of Cambodian education. It is possible that this course may include different proficiency levels and more than one progress

level; a course may be offered to a discipline or more than one discipline. For more explanation, see Section 2.2.1 (pp. 28-30).

### **1.5 Methodology of the study**

The current research is, in its major respects and for practical purposes, a case study of a university in Cambodia. A case study enables in-depth and holistic investigation of a single entity that have well defined boundaries, for example an organisation or institution or similar (Yin, 2014). Specifically, the Faculty of Science in a Category C university was chosen for this study. A university in Category C was chosen because it represents the majority of universities in Cambodia, and thus the findings should be widely applicable especially to other Cambodian universities (DHE, 2014b). In this study, the perceptions of two groups of stakeholders, namely academic group: undergraduate students, subject lecturers and English lecturers, and industry group: graduate employees and employers, were investigated.

To explore their perceptions, the study employed an explanatory sequential mixed method approach combining quantitative and qualitative phases. With a greater emphasis on quantitative over qualitative enquiry in the explanatory sequential design, data were collected sequentially in two phases, beginning with the quantitative data collection and then collecting the qualitative data and using it to explain or elaborate on the quantitative findings (Creswell & Plano-Clark, 2011). In the quantitative questionnaire phase, 341 participants returned the questionnaires, comprising undergraduates ( $n = 252$ ), subject lecturers ( $n = 43$ ), English lecturers ( $n = 16$ ), graduate employees ( $n = 19$ ) and employers ( $n = 11$ ). To analyse the findings of the quantitative phase, descriptive statistics (e.g.,  $M$ ,  $SD$ , *Crosstabs*) and inferential statistics (e.g., Kruskal-Wallis test; Spearman's Rho correlation) were calculated with the help of the SPSS application. In the second phase of the study, qualitative interviews, conducted as one-to-one semi-structured interviews, were completed with 30 volunteers who



were participants in the first phase: the sample consisted of undergraduates (n = 6), subject lecturers (n = 6), English lecturers (n = 6), graduate employees (n = 6) and employers (n = 6). Thematic analysis was used to analyse the interview data. With the help of the Nvivo application, the data were coded deductively and also inductively in order to explore both predetermined and emerging themes (Boyatzis, 1998). Finally, the data were integrated in order to answer all of the research questions.

### **1.6 Significance and contribution of the study**

The study reported here is significant as it contributes to needs analysis research in the ESP field in terms of both theory and practice.

First, this study contributes by responding to the call for additional needs analysis research in the ESP field. The importance of needs analysis in ESP course design has been supported by many scholars (e.g., Basturkmen, 2006, 2010; Flowerdew, 2013; Hutchinson & Waters, 1987; Richards, 2001). Moreover, while many research studies into needs analysis have been conducted globally, because it is a crucial step in designing ESP courses, yet more research is still being sought to address contextual and social issues in needs analysis research (Abuklaish, 2014; Vo et al., 2016), issues which at this time have not been adequately explored.

The second contribution made by doing the present study is directly associated with its aim to obtain information on the students' needs and skills for both EOP and EAP fields. Unlike previous research which has had a narrow focus on a single ESP domain (either EAP or EOP), and focused on needs analysis for either EAP course design or EOP course design, the present research is among the very few studies that has incorporated both academic and industry stakeholders. Moreover, it provides evidence-based recommendations for hybrid ESP

courses that integrate professional and academic skills, which at this time are in widespread use and very popular in HEIs in Asia.

In addition, this study contributes to the improvement of the methodology in the field of needs analysis and situation analysis. As mentioned earlier in the rationale, many research studies into needs analysis are either quantitative or qualitative in nature (Alastal & Shuib, 2012; Bosuwon & Woodrow, 2009; Chia et al., 1999; Crosling & Ward, 2002; Evans, 2012; Jackson et al., 2006; Vo et al., 2016). This study is among the very few studies that employ a mixed methods design to investigate students' needs. The benefits of using a mixed methods approach are evident in the depth and comprehensiveness of the findings.

This research has significant implications for ESP course innovation in the Cambodian context and also in other South East Asian countries faced with similar circumstances. The process of regional economic integration, reflected in the promotion of the ASEAN Economic Community (AEC) expects a free flow of skilled labour to occur around the ASEAN member countries. To align with ASEAN English language skill reinforcement, many universities have started developing ESP courses. This phenomenon has also begun in Cambodia, which has seen many universities offer ESP courses without any systematic needs analysis research. The initiative producing ESP courses is supported by the Department of Higher Education, through the provision of technical support and training for HEIs in Cambodia for the last two years (DHE, 2014a, 2014b). This study, the first comprehensive needs and situation analysis research in Cambodia, has immense value in the development of the ESP courses in the country. One additional aim is to provide a needs and situation analysis model in ESP course design in the Cambodian context. The recommendations of this study can assist policy makers, HEI administrators, curriculum designers and ESP providers in Cambodia in

particular in designing appropriate curricula in the HE context; it can also be considered to have relevance to other ASEAN countries aiming to improve their language programs.

### **1.7 Structure of the thesis**

This thesis is organised into eight chapters. A brief overview of each chapter is given below.

First, this introductory chapter has introduced the background of the study, presenting the history of foreign language education and the challenges affecting EFL in Cambodia, followed by a description of the research area. It continued with a discussion of the rationale for the present study, which led to the research questions. There was then a brief description of the research design employed, and the significance of this research in the ESP field.

Finally, there is an outline of the structure of the thesis.

The literature review chapter defines the concepts employed in the study. It offers an overview of ESP in general, the several major branches of ESP and current issues in ESP research. It then discusses language course design, describing theoretical and practical concepts in language curriculum design and development, and the main components of language curriculum which include syllabus frameworks and approaches, testing and assessment, teaching materials, and needs and situation analysis. Then the chapter reviews empirical research that has been undertaken on needs and situation analysis, which is the main focus of the current study. These are the concepts that form the conceptual and theoretical framework for the study.

The methodology chapter begins with the methodological framework employed for the study, consisting of the definition and explanation of characteristics of the mixed methods design, its advantages and disadvantages. This is followed by the rationale for choosing the mixed methods design and a justification for the choice of the explanatory mixed methods approach.

There is also a discussion about the choice of instruments, including questionnaires for the quantitative phase, and interviews for the qualitative. An explanation of the principles of reliability, validity, practicality, and ethics as they apply to this study is provided and a discussion of the data collection and data analysis processes is also incorporated into this chapter.

The quantitative and qualitative findings (Chapters 4 and 5) present the results obtained from the quantitative and qualitative phases. Chapter 4 begins with a discussion of the quantitative findings, organised according to the schedule of questionnaire items. Then Chapter 5 presents qualitative findings, organised using the interview question protocol. The findings of both phases are integrated in the final section of Chapter 5.

A discussion of the results of the quantitative and qualitative phases is provided in Chapter 6. The results discussion is set out based on the order of the research questions. The chapter begins with a discussion of the perceptions of the five stakeholder groups about the necessity for the development of ESP courses in the Cambodian HEIs. There is then a discussion of the stakeholders' suggestions about the scope, duration, and syllabus of the ESP course. An examination of the perceived specific English language skills necessary for the undergraduate students follows, before the final discussion on the stakeholders' perceived challenges and their suggestions for measures that would be appropriate and might be taken to address these challenges.

The concluding chapter summarises the main findings and contributions of this study. It also offers recommendations to educational administrators, policymakers and course designers, recommendations that emerge from the study's findings. In addition to providing recommendations, this chapter also explains the limitations of this study, and how these can be used to form the basis of future research.

## CHAPTER 2

### LITERATURE REVIEW

This chapter has six sections. Section 2.1 defines English for specific purposes (ESP) and offers an overview of the ESP field, the branches of ESP and research already undertaken into ESP. Section 2.2 defines ESP program development: illustrating the theoretical and practical perspectives in the curriculum; the components of language curriculum including syllabus frameworks and approaches, testing and assessment; and the curriculum development process itself. Sections 2.3 and 2.4 cover concepts and issues in needs analysis and situation analysis relating to ESP curriculum design. Section 2.5 reviews empirical research into needs analysis and situation analysis. Section 2.6 summarises the chapter's main points and highlights the gaps in the literature, which this research attempts to address.

#### **2.1 Defining ESP**

##### *2.1.1 Overview of ESP*

ESP has been defined similarly by most authorities in the field. The term was coined to refer to an ESL or EFL language teaching and learning approach for groups of learners who have specific needs (Basturkmen, 2010; Hutchinson & Waters, 1987; Paltridge & Starfield, 2013b; Richards, 2001). Richards (2001) explains that ESP enables students to develop their English language needs so that they can communicate with a group of people who have good English or general English proficiency in a specific domain. This is reinforced by Basturkmen (2010) who points out that one of the principles of ESP is to satisfy learners' needs for a specific type of English. A comprehensive list of the characteristics of ESP is offered by Dudley-Evans and St John (1998). ESP is:

- designed to meet specified needs of the learners;
- related in content (that is in its themes and topics) to particular disciplines, occupations and activities;
- centred on language appropriate to those activities in syntax, lexis, discourse, semantics and so on, and [to] analysis of the discourse;
- in contrast [to] ‘General English’.

Dudley-Evans and St John (1998, p. 3)

In this study, ESP refers to English language courses that are aimed at learners with specific academic and professional needs.

ESP has a very long history with no identifiable start date. While several authors (e.g., Hutchinson & Waters, 1987; Richards, 2001) claim the birth of ESP in the 1950s, Swales (1988b) argues that there is no clear ESP beginning and reviews the development of ESP in the early 1960s. This is evident by the publication of the first ESP textbook in 1960 and another textbook publication of English for Science and Technology in 1965 (Herbert, 1965). After the 1960s, ESP evolved and spread across the world until the present.

A. M. Johns (2013) offers a comprehensive review of the history of ESP. The ESP research history was divided into four sections by this author. The first phase was the early years from 1962 to 1981 (from text-based counts to “rhetorical devices”), followed by the more recent past between 1981 and 1990 (broadening the scope or introducing central concepts), then the modern age from 1990 to 2011 (new international journals, genre and corpus studies take centre stage), and finally the future, referring to the years after 2011.

### ***2.1.2 Branches of ESP***

Since the emergence of ESP in the 1950s, ESP has evolved into two main branches: English for Academic Purposes (EAP) and English for Occupational Purposes (EOP) or English for Professional Purposes (EPP) (see Table 1 next page). After the launch of the ESP Journal in 1980, EAP was considered one of the two main branches of ESP (Hyland, 2006). EAP primarily aims to respond to students' academic needs. To identify more specific domains of EAP, two sub branches have arisen: English for *General* Academic Purposes (EGAP) and English for *Specific* Academic Purposes (ESAP) (Basturkmen, 2010; Clapham, 2000). While the examples of EGAP domains include English for science and technology, English for academic writing, English for (academic) medical purposes and English for management, finance and economics, ESAP domains can be English for liberal arts, English for law studies and English for medical purposes (Basturkmen, 2010; Clapham, 2000; Dudley-Evans & St John, 1998).

The second main branch of ESP, namely EOP emphasises English learning and teaching courses that have as primary goals to enhance the language ability of the learners in the workplace and focus on job-related communication tasks. Like EAP, EOP consists of two specific sub-branches: English for General Occupational Purposes (EGOP) and English for Specific Occupational Purposes (ESOP) (see Table 1 next page). English for airlines, for the health care sector, for the hospitality industry and prevocational or vocational English are domains of EGOP; English for pilots, English for air traffic controllers, nursing and hotel receptionists are examples of ESOP's domains (Basturkmen, 2010; Clapham, 2000; Dudley-Evans & St John, 1998).

Table 1 Branches of ESP

ESP branch	Sub branch	Domain
EAP	EGAP	English for science and technology English for academic writing English for (academic) medical purposes English for management, finance and economics
	ESAP	English for liberal arts English for law studies English for medical purposes
EOP/ EPP	EGOP/ EGPP	English for airline workers English for the health care sector English for the hospitality industry Pre-vocational and vocational English
	ESOP/ ESPP	English for pilots English for air traffic controllers English for nursing English for hotel receptionists



Although there are many research studies into ESP, EAP and EOP, the theoretical motives behind the adoption of ESAP, EGOP, ESOP or EGAP have not been clearly identified. Hyland argues that EAP instruction should be discipline specific (see Hyland, 2006; Hyland, 2011). However, the issue of specificity remains controversial, especially among ESP program stakeholders. For example, even when a needs analysis is conducted before course design, students must still adapt what they acquire from their ESP classes into their specific disciplines (A. M. Johns, 1988). Additionally, based on corpus studies in different genres, for example, even a lab report for the Chemistry discipline differs from one in Biology (Parkinson, 2013). For this reason, this study employs the terms EAP and EOP as the two main components of ESP. This is also done because most stakeholders are familiar with these terms rather than EGAP or ESAP. The present study also discusses the specificity issue in designing the ESP course in the context of Cambodian higher education.

### ***2.1.3 Research issues in ESP***

Several research publications in ESP can be traced back to approximately 60 years ago. A. M. Johns (2013) and Gollin-Kies et al. (2015) provide a comprehensive review of ESP research from 1962 until 2011 and offers predictions about the future of ESP. The first and most cited published ESP book, a compilation of research edited by Swales (1988a), reviewed ESP research development from the early 1960s to the 1980s. At this early stage, ESP research and publications focused on English for science and technology (see Barber, 1962; Herbert, 1965; T. F. Johns & Dudley-Evans, 1980; Lackstorm, Selinker, & Trimble, 1972; Swales, 1971) and this emphasis is still strong (Dudley-Evans, 2001; A. M. Johns, 2013). Science also forms the interest area of this study, as it is a domain in which ESP is frequently applied.

In the 1960s, the research undertaken into ESP primarily involved text counts, namely counting words and grammatical items within written texts or discourses. A. M. Johns (2013)

comments that the ESP research focus in 1962 was mainly about counting grammar features across several genres. However, this focus on grammatical features within texts was heavily criticised. The effectiveness of this syllabus was questionable as it did not respond to the learners' genuine needs and did not enable students to perform real world tasks. Richards (2001) argues that each individual group of learners has their unique needs in language learning. In response, Hutchinson and Waters (1987), for example, suggested a switch of focus from texts to students' needs as the basis for designing ESP courses. To obtain information about what students need, it was suggested that a needs analysis be conducted before course commencement, and this is the main focus of this study. Needs analysis is elaborated in Section 2.3.

The last two decades have highlighted a growing number of research studies and practices into ESP, not only in Europe but also across the globe. This phenomenon is especially true in countries demanding specialised language skills and economic improvement (Ashuja'a, 2011; Ron Howard & Gillian Brown, 1997). A. M. Johns (2013) considers this period 1990-2011 as the modern age in ESP and beyond 2011 as the future. The topics of ESP research publications include discourse and genre analysis (e.g., Cheng, 2015; Hyland, 2015; Martín & León Pérez, 2014), corpus studies (e.g., Grabowski, 2015; Hoekje, 2007) and needs analysis (e.g., Boshier & Smalkoski, 2002; Chew, 2005; Chia et al., 1999; Crosling & Ward, 2002; Elisha-Primo, Sandler, Goldfrad, Ferenz, & Perpignan, 2010; Evans, 2012; Gimenez, 2014; Jackson et al., 2006; Lehtonen & Karjalainen, 2008; Smith & Thondlana, 2015; So-mui & Mead, 2000; Spence & Liu, 2012; Xie & Adamson, 2015) in both academic and workplace settings.

The main focus of this current research is on forming a needs analysis framework for ESP course design; therefore, research relating to ESP needs analysis is reviewed.

In recent years, to meet academic and workplace demands and the needs of global mobility, ESP course development and research publications, especially in needs analysis, have been widespread in Asia, particularly in higher education sectors. This is evident in the growth of the number of articles published in several ESP journals such as *The Asian ESP Journal*, *English for Specific Purposes Journal*, *The Journal of English for Academic Purposes* and *RELC Journal*. Many of the ESP research articles published are from Taiwan (e.g., Chia et al., 1999; Spence & Liu, 2012), China (e.g., Liang & Chen, 2011; Xie & Adamson, 2015), Iran (e.g., Atai & Shoja, 2011; Moslemi, 2011; Zohrabi, 2011), Thailand (e.g., Bosuwon & Woodrow, 2009), Hong Kong (e.g., Chew, 2005; Chien, Lee, & Kao, 2008; Evans, 2012; Somui & Mead, 2000), India (e.g., Lo, 2014), Palestine (e.g., Kumari & Rahman, 2012) and Israel (e.g., Elisha-Primo et al., 2010).

The context of Cambodia has seen implementation of some ESP courses at the university level, but there has been limited research in the field. Noticeably, Cambodia has seen a shift from of general English programs to a demand for ESP courses, yet only a limited number of courses have been developed and this was not doen systematically within the country by some public and also some private universities. For example, to meet learners' specialised English language needs, Macalister (2007) conducted research into the specific English language needs of the electrical engineering students at the Institute of Technology of Cambodia, for the purpose of raising teachers' awareness of students' ESP needs based on students' and teachers' perceptions. His research suggested the development of an ESP course at that institution.

Several Cambodian private higher education institutions (e.g., Phnom Penh International University, Chela University) have revised their English language curricula to respond to the students' needs and have adopted ready-made commercial ESP textbooks as curricula.

However, there was no systematic course or curriculum development undertaken which considered contextual factors and the specific needs of the student intake before implementation of the different ESP courses. This has resulted in a very inconsistent approach to the English curriculum at the different HEIs.

The adoption of foreign curricula and commercial textbooks can cause dissatisfaction and doubts regarding the effectiveness of a program. What is perhaps even more surprising, is that most Cambodian higher education institutions, despite the new situation and change in demand, have still mainly been offering general English courses (DHE, 2014b).

The current study aims to address the lack of recognition given the process of ESP course development in the Cambodian context by conducting a systematic needs and situation analysis study in a prominent Cambodian higher education institution. The study also aims to provide recommendations and a proposal for a framework of ESP course development for the Cambodian higher education institutions in general.

The next section examines what ESP program development entails, to better inform the theoretical and conceptual framework of the study.

## **2.2 Defining curriculum and course design**

This section provides definitions of the terms curriculum and course. The term curriculum is important in this study, as it is the basis for any course development. In this section there is also a review of the components of the curriculum design process, theoretical frameworks and also an explanation of the course components. It is anticipated that an appreciation and understanding of the elements of the course can lead to the systematic development of organised and purposeful systematic curricula in Cambodian universities.

### *2.2.1 The curriculum development process*

The introduction of the concept of a language curriculum developed alongside discussions of ESP and the rise of communicative language teaching (CLT). In the 1960s, applied linguists criticised the focus on acquiring and mastering the grammatical system in language teaching and learning. This criticism led to the strong influence of CLT and the theory of communicative competence on language curriculum design after the late 1960s and through the 1970s and also the replacement of structural, situational and audio lingual approaches (Canale, 1983; Canale & Swain, 1980). In the 1980s, the influence of CLT emphasised a focus on the learners, which is evident in the work of Hutchinson and Waters (1987).

Language learning and teaching has, in many parts of the world, switched its focus from the emphasis on grammatical rules to one heavily based on principles of meaning making principles. This phenomenon has also led to a systematic procedure of analysing of learners' needs and the context of the learning and teaching as the starting point for the development of any language course. This seemed to be a more suitable approach to the ones existing at that time, namely that of complying with a course designer's presumptions of the learning goals, nature and processes.

There seems to be no clear consensus among the authorities in defining the term curriculum development. For example, there are differences apparent in terminology employed by British-influenced ELT and North American influenced ELT (Graves, 2008). Schwab (1983), a prominent curriculum theorist, offered a rather elaborate definition of the term curriculum:

Curriculum is what is successfully conveyed to differing degrees to different students, by committed teachers using appropriate materials and actions, of legitimated bodies of knowledge, skill, taste, and propensity to act and react, which are chosen for instruction after serious reflection and communal decision by representatives of those

involved in the teaching of a specified group of students who are known to the decision makers (Schwab, 1983, p. 240).

For the purposes of this thesis, the researcher employs the definitions by Graves (2008, p. 147) because she offers clear and practical definitions of a number of concepts. First, the term course is defined as “a teaching/learning experience that occurs over a specific period of time [perhaps even years] with a specific focus” and is suitable when talking about adults in tertiary education. A program is all of the related courses or courses of study offered in a particular institution or department. Programs and courses all require curriculum development to take place. In general terms, the term curriculum refers to “the processes and products of planning, teaching and evaluating a course of study or related courses” so curriculum development covers all of these aspects that relate the design (Graves, 2008, p. 147). The term course is employed in this thesis to refer to a curriculum taught to a cohort of students over an extended period such as two or three semesters or more. It is an appropriate term for the Cambodian context, as it can consist of different offerings and levels, and Cambodian educators understand its meaning.

There is a general consensus that the term curriculum refers to a learning process relating to teaching content and thus curriculum design involves work on several steps. In the past, curriculum design was visualised as a linear process, but this concept has been abandoned. In other words, the starting point of curriculum development can be any point in the process.

Curriculum design is considered by several authors (Graves, 2000, 2008; I. S. P. Nation & Macalister, 2010; Richards, 2001) to be a process, which involves the following steps: assessing needs, articulating teacher and learner beliefs, defining the context, formulating goals and objectives, developing materials, designing the assessment plan, organising the

course (developing the syllabus) and conceptualising the content (skills, tasks, genres) (see Figure 1 next page).

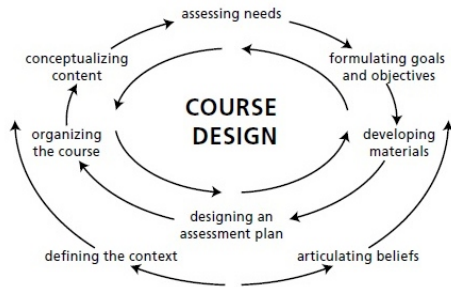


Figure 1 Framework of course development processes (Graves, 2000, p.4)

Richards (2001), a prominent author on language curriculum design, believes in beginning the curriculum design process from needs analysis, and uses the term situation analysis or environment analysis, to refer to the institutional, social and political circumstances in which the curriculum takes place. A sound ESP course is context-based. Chiarelott (2006) argues that effective teaching and learning is contextually driven, and this needs to be recognised in the curriculum development process. That is, the ultimate goals and values of a curriculum are to provide learning experiences to students and the experience come from the context or environment (Wiles, 2009). In addition to context, other components included in language curriculum design are language acquisition research, which needs to be considered when thinking of learner needs and teaching methodology; this aspect then needs to be aligned with the syllabus and assessment within a specific course of study (I. S. P. Nation & Macalister, 2010).

Despite the many trends in curriculum implementation, there is a consensus among researchers that curriculum design cannot be successful unless it is supported by higher authorities such as the government (top down) but it also needs the support and involvement of teachers and students (bottom up) (Graves, 2008; Markee, 1997; Stoller, 1997). Graves

(2008, p. 175) elaborates “teacher involvement is critical to the success of a curriculum, but teachers cannot alone and on their own create and sustain it”. The needs and situation analysis conducted in this thesis involving students, teachers and employers contributes to one part of the process, the bottom up aspect, which is often absent in a curriculum innovation process (Graves, 2008).

The next sections discuss the theoretical framework and components of course design.

### *2.2.2 Theoretical frameworks in course design*

The course is not merely a description of a course to be taught; considered also are relevant theoretical and practical issues that are determined by the context of a specific learning and teaching setting. Curriculum or course designers should be able to justify the implementation of either a proposed or existing curriculum. A number of educational theoretical conceptions have been introduced in curriculum design to ensure the curriculum content is useful and relevant to the students and society. Chiarelott (2006), when looking at curriculum in context, confirmed that course design should be based on six curriculum orientations developed by Eisner (1979) and Eisner and Vallance (1974). Chiarelott (2006) argues that the first four orientations are applicable for a context-based curriculum. The four orientations include academic rationalism, development of cognitive processes, personal relevance and social adaptation or reconstruction. Richards (2001), in the TESOL context, agrees with Chiarelott (2006) on academic rationalism, personal relevance and social reconstruction. However, Richards also incorporates two other theoretical considerations for the curriculum: social and economic efficiency and cultural pluralism. These curriculum ideological concepts are relevant to most ESP course design contexts, especially in the era of globalisation.



A common philosophical orientation, which can influence a curriculum, is academic rationalism. This term refers to a belief that an educated person is one who has mastered academic content knowledge. By way of explanation, a good citizen might be a person educated in several curriculum subjects. The role of the school is to promote a particular cultural tradition and develop students' intellectual capacities and critical faculties and this done through the curriculum (Clark, 1987). However, this ideology of education has been criticised for its lack of providing any response to the actual needs of learners and society (Richards, 2001).

Personal relevance or learner centeredness must be considered a better means of responding to the personal needs of learners, and placing emphasis on an individual students' learning needs and experience. This educational philosophy also sees learning as a process that achieves by developing independent and responsible citizens. The learners are believed to be able to select and evaluate what knowledge relevant is for them and be able to learn from their own efforts. This philosophy aims at fostering self-reflection, awareness, critical abilities and leads to an emphasis on process more than product. However, learner-centredness might not be sufficient for a student because a responsible citizen must also be accountable to society, which suggests other educational orientations might also be necessary (Richards, 2001).

Social reconstructionism contends that education should enable a student to both participate in the society and analyse and address social injustice. According to the concept of cognitive process development, a curriculum should aim to develop students to be lifelong learners. To be a lifelong learner, it is believed that education should equip learners with a set of skills and strategies that will assist them acquire content subjects but also metacognitive and critical thinking skills development. Students are not simply objects of knowledge for they must find

ways of resisting social control (Freire, 1972). However, its critics argue that teachers or students cannot change the social system so easily.

Another curriculum ideology in evidence is socioeconomic efficiency. This ideology is based on the efficiency model, that is, educated students are thought to be economic literates. In other words, graduated students should have the necessary knowledge and skills to effectively perform the tasks and jobs that come to them as they participate in today's economy-based societies. The response of foreign or second language instruction should be to equip student with practical and functional skills. It is this type of thinking that has influenced several curricula in language teaching, including the notional-functional and product-based or competency-based syllabuses (Richards, 2001). For example, Canagarajah (1993) who did a critical ethnography of a Sri Lankan tertiary classroom, found that students were motivated to learn general English to perform in socioeconomic mobility although they had to learn grammatical rules to pass the exam. This philosophy has been criticised as a reductionist view and presupposes that knowledge is external to the learner.

Cultural pluralism is another philosophical framework that proposes that students should be able to live happily in multinational and economically diverse societies. Multilingual, multicultural communities are currently common across the globe as we are living in the era of rapid growth in international business and globalisation. Thus, the recognition of cultural pluralism entails teaching students cross-cultural skills.

These theoretical concepts have been identified as applicable to language education and their curricula, specifically development of an ESP course curriculum. These educational philosophies and ideologies need to underpin the mission statement, rationale and goals for ESP course development, which is often not clearly identified in a curriculum project.

Understanding these theoretical and practical ideologies that lie behind language education

enables curriculum developers to consider broader concepts along with language elements when designing a language course. It is also important for authorities to take these into account when designing policy and making recommendations for HEIs.

In this study, the design of the needs and situation analysis model is influenced by cultural pluralism, learner centredness and social-economic efficiency, these being the main trends in language education. The other two curriculum ideologies could also possibly be integrated in the prospective course development through the teaching methodology, but this is beyond the scope of this thesis.

### ***2.2.3 Components of the language curriculum***

The main curriculum components include needs and situation analysis, syllabus, objectives, teaching methods, and teaching materials and evaluation. The design of the curriculum mainly results from, and is based on, the needs and context of the learners. However, in practice, it is frequently the case that stakeholder interests, learner needs and context are not given sufficient priority. In Cambodia, as in other countries, the situation is less than ideal. To offer a clear picture of a curriculum is also an aim of this research, so this section elaborates its main components.

#### ***2.2.3.1 Syllabus approaches***

The notion of syllabus is related to but generally confused as synonymous with the term curriculum. Curriculum incorporates syllabus (Ewing, 2010; Wiles, 2009), but a syllabus is just one element of a curriculum (Richards, 2001). Graves (2008) defines a syllabus as plan for a specific course in a content area for students to learn. A language syllabus consists of a set of objectives, content and assessment as a guide for a language course (Feez, 1998;

Graves, 2000). Selecting an appropriate syllabus framework is one of the main tasks in organising a course, and this is investigated in this study.

There are several syllabus frameworks referred to in the literature and each has its own strengths and weaknesses. The principal ones include grammar (structural) syllabus, lexical syllabus, functional syllabus, situational syllabus, topical or content-based syllabus, competency-based syllabus, skills-based syllabus, task-based syllabus and genre or text-based syllabus (Ellis, 2004; Feez, 1998; Halley & Austin, 2004; I. S. P. Nation & Macalister, 2010; Richards, 2001).

The first two common traditional syllabus frameworks include grammatical and lexical syllabi. A grammatical syllabus describes a course whose content is based on grammatical forms, whereas a lexical syllabus refers to a syllabus that promotes the learning of vocabulary and this constitutes the main course content. However, both grammatical and lexical syllabi have been criticised for representing only partial components of communicative language skills (Richards, 2001) and over-emphasising “accuracy at the expense of meaningful communication” (Ur, 2012, p. 187).

Both functional and situational syllabi assist in filling the gaps of grammatical and lexical syllabi by focusing on the use of language rather than on a micro element of language (Richards, 2001; Richards & Rodgers, 2001). While a functional syllabus aims to assist students to master a set of language functions such as negotiating and requesting, a situational syllabus, by comparison, organises the course content based on a set of contexts where language is applied, such as at the market or doctor’s office. Even though both functional and situation syllabi are considered more complete in terms of language content covered, than are either the grammatical or lexical syllabus, they have also been criticised for emphasising

language fluency while ignoring language accuracy (Richards, 2001). They are also regarded as focusing on limited and specific aspects of communication competence.

Another type of syllabus is the content-based syllabus, known also as content-based instruction (CBI) in language learning and teaching, is often applied in immersion in bilingual schools. CBI has been influenced by the input hypothesis (S. D. Krashen, 1992), which emphasises meaning rather than forms in acquiring integrated language and content instruction. CBI is often considered appropriate for discipline specific students in ESP classes. For example, CBI curricula have been practiced from primary to tertiary level around the world in content subject classes such as science, integrated ESL, and also in content learning and teacher education courses in Asia, which includes Cambodia (Lyster & Ballinger, 2011; Stoller, 2004)

However, one of the major weaknesses of CBI is that there have been complaints from teachers about their lack of discipline specific language, or limited language proficiency (Halley & Austin, 2004). Lyster and Ballinger (2011, p. 285) argue that there is a need for professional development to assist teachers in CBI to deal with these challenges because they have been trained to teach either language or content subject, “but not both”.

Another syllabus that is popular for ESP courses, especially EOP classes, is a competency-based syllabus, referred to as competency-based language teaching (CBLT). CBLT draws on the theoretical framework of economic efficiency, as it prepares students to perform tasks in a particular context (Richards & Rogers, 2001). CBLT is an outcome-based approach and competencies can include skills, knowledge, attitudes and behaviours for the performance of real world tasks. CBLT describes the objectives of the course based on a set of competencies that students must master. This syllabus is well known for integrating real world tasks into the language instruction (Bensah, Ahiekpor, & Boateng, 2011). It has, however, been criticised

because its competency specifications are often based on intuition rather than research (Richards, 2001). It is also difficult to break down tasks into discrete competencies.

Another popular syllabus for ESP classes and one commonly in use is the task-based syllabus which describes a course around tasks that students can perform using the target language (Ellis, 2004). Nunan (2004, p. 1) summarises task-based language teaching as:

- a needs-based approach to content selection
- emphasising learning to communicate through interaction in the target language
- introducing authentic texts into the learning situation
- providing opportunities for learners to focus not only on language but also on the learning process itself
- enhancing the learner's own personal experiences as important contributing elements to classroom learning
- linking classroom language learning with language use outside the classroom

A task-based syllabus allows students to practice the target language when doing assigned tasks in the language classroom (Ellis, 2004). The earlier version of the task-based syllabus favoured natural acquisition and rejected focus on form instruction. However, the new task-based syllabus has integrated focus on form with pre-task and post-task phases. For example, R. Oliver et al. (2013) employed this syllabus in teaching indigenous students in a vocational education and training program in Australia. However, task-based language teaching is not widely used by non-native speaker teachers, especially in the EFL context, as it demands high proficiency level teachers or native-speaker teachers (Richards, 2001). Also it has been suggested that students in task-based language teaching need to have good general English proficiency. This syllabus type is more applicable to high proficiency students than students

with low English proficiency (Richards & Rodgers, 2015). In addition, the grading and sequencing of tasks in a syllabus is regarded as a major challenge for designers.

Another frequently used syllabus, especially for EAP classes, is the skills-based syllabus.

With this syllabus, the course is organised around skills such as listening, reading, speaking and writing. The skills-based syllabus is a popular approach in teaching language skills.

However, it has been criticised because of its focus on an individual discrete macroskill, without integrating all the macroskills that real world tasks specifically require (Ellis, 2004; Richards, 2001).

Finally, a text-based or genre-based syllabus analyses texts and samples of discourse that the students will encounter in their academic or professional setting. Feez (1998, p. 5)

summarises the basic principle of the genre-based syllabus:

- language is a resource for making meaning
- the resource of language consists of a set of interrelated systems
- language users draw on this resource each time they use language
- language users create texts to make meaning
- texts are shaped by the social context in which they are used
- the social context is shaped by people using language

Within the text-based syllabus, the students go through four stages of learning (Feez, 1998) focusing on introducing texts within their social context. The first stage called ‘building knowledge in the field’ involves students and teachers developing awareness of a particular genre, such as narrative, report etc, building awareness of the social purpose of the text, and the role of the writer/reader/speaker in shaping the text. In the second stage, ‘modelling of text’, students and teachers are involved in “discussions of the cultural and social purposes of

genre and the sharing of experience within that context, followed by a model text.” (Burns, 2001, p. 202). During the modelling of the text, students are engaged in activities learning about the appropriate lexical and grammatical features which achieve the social purposes of the text (Butt, Fahey, Feez, & Spinks, 2012). During the third stage, students and teachers work collaboratively in ‘joint construction of text’, before they begin working independently in the last stage during ‘independent construction of the text’. The aim of the last stage is to build students’ confidence and skill by engaging them in producing their own targeted-genre (Hammond, 1992). The criticisms of the text-based are similar to those of the competency-based syllabus (Richards, 2001). As with the competency-based syllabus, this syllabus is criticised for its heavier focus on product than the process of learning. Students are expected to acquire the language better in process-based learning, and they can be assisted with use of appropriate scaffolding. In addition, the text-based is criticised for its intensive study and analysis of model texts and construction of texts based on the models, which produced imbalance in the concentration of the four macroskills (Richards & Rodgers, 2015).

Each syllabus framework mentioned above has its own strengths and weaknesses and “the complexity of learning languages in classrooms is such that no one approach can be fully responsive to learners’ needs” (Graves, 2008, p. 161). Then, there is a call, for the integration of these syllabuses. Krahnke (1987) argues that to address the complex goals of a language course, combining different types of syllabuses is needed. That is, an integrated syllabus (Richards, 2001, p. 164), mixed or multi-strand syllabus (Ur, 2012, p. 190), or mixed-focus model (Finney, 2002, p. 76) is organised to respond to priorities and the changing or perceived needs of the learners.

However, the students’ needs and priorities that are continually changing in response to workforce demands are often neglected and unidentified in many ESP course situations



(Abuklaish, 2014; Feez, 1998; Graves, 2000; I. S. P. Nation & Macalister, 2010; Richards, 2001; Vo et al., 2016), thus making it difficult to have an established syllabus. Additionally, a sound decision on the choice of syllabus needs to involve the participation of relevant stakeholders, but particularly the teachers and students who, in practice, often have little input into such matters as syllabus design.

For the above reasons, the present study seeks to investigate stakeholders' recommendations about the appropriate syllabus for an ESP course. This includes input from both teachers and students as well as other academic and industry stakeholders.

### *2.2.3.2 Testing and assessment*

Testing and assessment constitute other essential component of a language course. The terms testing and assessment are different. Assessment is an ongoing process that incorporates various methods, including testing. Assessment is a combination of all kinds of formal and informal judgements and findings inside or outside the classroom (Mihai, 2012). Testing is tests that are generally techniques of assessment measuring students' performances (H. D. Brown & Abeywickrama, 2010; I. S. P. Nation & Macalister, 2010; Nunan, 1988). Tests are double-edged swords, that is, they can either benefit or harm the learning and teaching. To reduce the harmful effects of tests, an appropriate assessment is needed to determine the outcomes of a language course, taking into account the purpose of assessment and the approach.

Within assessment literature, there are two well-known forms of assessment: formative and summative. Formative assessment refers to an evaluation of students' learning to assist them to progress in their learning process and achieve their learning outcomes (Hughes, 2003).

Formative assessment focuses on providing informal and formal teacher feedback. Formative

assessment can take place using traditional assessment methods constructively. Checklists, observations essays, tests, portfolio, self-assessment are examples of formative assessment. Summative assessment measures what students have learned from a course and usually occurs at the end of the course (H. D. Brown & Abeywickrama, 2010). Examples of summative assessment can be final exams, midterm exams and quizzes. According to a study by H. D. Brown and Abeywickrama (2010), formative assessment better informs students' learning than summative assessment. Black and Williams (1998) also suggest that teachers can convert a summative assessment into a more formative assessment by making summative assessment a form of feedback on the students' learning process. In response, both pre- and in-service teachers must be well trained and be assessment literate; in many cases they are not. For example, Tao (2014) examined assessment literacy among English lecturers in Cambodia and found that they lacked this kind of literacy, and this, she noted, had a negative impact on their actual assessment implementation.

In the Asian context, particularly in Cambodia, an appropriate approach to language assessment must be considered to assess students' actual performance. Even though traditional assessment such as final exams, midterm exams and quizzes, is still common and preferred in some parts of the world, particularly in Asia, alternative or innovative assessment such as a presentation or debate, which is more performance-based and authentic, offers a better reflection of a student's actual performance (H. D. Brown & Abeywickrama, 2010). Additionally, innovative assessment enables teachers to provide more useful feedback to students, and to motivate students in their learning process, over its counterpart, traditional assessment. The issues around assessment are part of the enquiry into the context of the ESP course design that is investigated in this study.

### *2.2.3.3 Teaching materials*

Another main component of curriculum is the teaching materials. One main teaching material challenge, which teachers often debate, is between authentic and inauthentic materials.

Materials can include both texts (in paper-based, audio, or visual form) and tasks in teaching and learning (Harwood, 2010). Many EFL or ESL teachers, in particular non-native English speakers, value authentic texts or materials in language teaching and learning. Authentic materials refer to materials designed for and used by general audiences, but are meant not for teaching and learning purposes (Jordan, 1997). However, other teachers tend to prefer using commercial textbooks, which are often inauthentic. Not only do they contain inauthentic materials but lack authentic and real life communication tasks. Inauthentic materials and pedagogically prepared tasks have been criticised, as they do not respond to students' real life needs. Bell and Gower (1998) argue that teachers should regard a commercial textbook as a resource, not a course. Many materials writers agree with Carter (1998) that a curriculum is formed by a mixture of authentic and pedagogically prepared materials as well as a synthesis of semi-authentic and authentic tasks (Harwood, 2010).

The teaching materials also need to be carefully evaluated (J. D. Brown, 1995; Graves, 2000; Richards, 2001). Dudley-Evans and St John (1998, p. 173) suggest strategies for selecting and adapting teaching materials as follows:

- select appropriately from what is available.
- be creative with what is available.
- modify activities to suit learners' needs.
- supplement by providing extra activities (and extra input)

The science and technological era has generated the employment of CALL materials alongside traditional teaching and learning materials. CALL, or computer-assisted language learning, incorporates tasks and activities from websites, software and courseware to produce materials for language teaching and learning. Reinders and White (2010) summarise the advantages of CALL materials into organisational and pedagogical advantages. While the organisational advantages include convenient access, storage and retrieval of learning behaviour records and outcomes, sharing and recycling, and cost efficiency, the pedagogical advantages of CALL materials are authenticity, interaction, situated learning and monitoring and recording of learning behaviour and progress. Chappelle (2001) offers several criteria for selecting appropriate CALL materials for a particular course: language learning potential, learner fit, meaning focus, authenticity, positive impact and practicality.

This study considers the teaching and materials by investigating how relevant stakeholders perceive what should be appropriate materials for the ESP courses.

### **2.3 Defining needs analysis**

As already mentioned, needs analysis is discussed in this section separately because it is one of the main aspects of the current study. Needs analysis is defined as a process of gathering relevant information about the needs of group of students, including their language skill needs (Graves, 2000; Richards, 2001). Curriculum developers incorporate needs assessment or analysis as the first stage of the curriculum development process in order to attempt to directly fulfil the needs of particular groups of students. Regarding ESP, language course designers regard needs analysis as an important starting point in language curriculum development given the foundation of the student-based principle.

The term needs has been variously defined. First, needs has been seen as desires, expectations, motivations, demands, constraints or requirements (Brindley, 1984). Richards (2001) argues that needs is not a thing that exists but rather, it is constructed and based on individual judgements of different stakeholders. Teachers, learners and employers may have different views on language learners' needs. To triangulate their opinions about learners' needs, it is important to involve them in the course design project.

The concept of needs analysis has been crucial in language generally, and specifically to ESP course design, but it is also of concern to those responsible for course delivery. In response to this importance, several books in this area have been published in order to help the ESP course designers (Basturkmen, 2006, 2010; Gollin-Kies et al., 2015; Huhta, Vogt, Johnson, Tulkki, & Hall, 2013; Long, 2005; Paltridge & Starfield, 2013a). Additionally, many journal articles in ELT journals such as *English for Specific Purposes Journal*, *English for Academic Purposes*, and *RELC Journal* have also published research indicating similar thinking about English language course design, noting the benefits of employing needs analysis.

Course designers identify and refine the results of the needs analysis to form the content of a language course. As students progress through the courses, their needs might also be changing. Graves (2000) suggests that needs analysis should be an ongoing process in determining the course content that is appropriate for students. In this thesis, needs analysis refers to a systematic procedure used to collect information about students' needs and preferences before an ESP course design. Due to time and scope limitations, this needs analysis model can be conducted before course design, but it is recommended in the final chapter that the needs analysis process be continued throughout the course implementation.

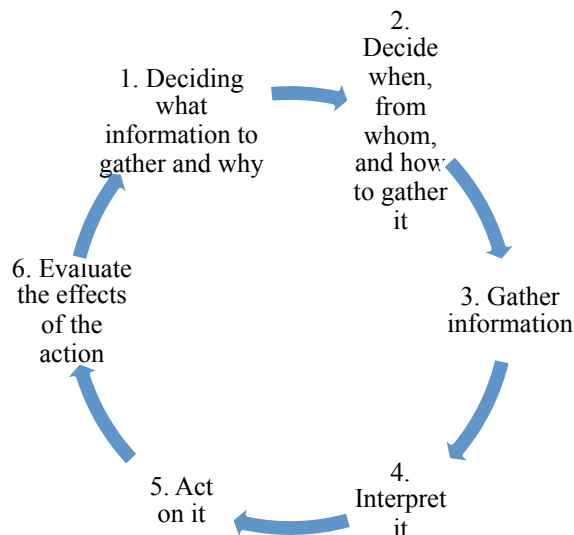


Figure 2 The needs assessment cycle (Graves, 2000, p. 100)

This study adopts Graves (2000) needs assessment cycle as seen in Figure 2. *Deciding what information to gather and why* is the first main step of needs analysis and it is aimed at ensuring that the ESP course content areas are appropriate for the students. In an ESP situation, learners have specific professional/academic needs. Language course content that does not appear directly relevant to their real world objectives can easily de-motivate the students. Basturkmen (2010) emphasises the importance of investigating students' perceived wants, the wants that motivate learners in the learning process, because the students should have some awareness about their needs (Hutchinson & Waters, 1987). Students are more likely to maintain a high level of motivation when the ESP courses fulfil their interests and needs, and this provides some of the justification for this current study. Steps 2, 3, 4, 5 and 6 are discussed in the Methodology chapter.

The three concepts of Hutchinson and Waters (1987) - necessities, lacks and wants - have been commonly employed in needs analysis research. First, *necessities* refers to objective needs indicating ESP learners' language journey or priority and the language skills and subskills, such as speaking, reading, writing and vocabulary that they must acquire. The

second concept, *lacks*, or *deficiency* refers to the outcomes of analysis of students' current language proficiency. *Lacks* is not applicable in this study because students' lacks are usually assessed through a diagnostic assessment, which can indicate students' language strengths and weaknesses. I. S. P. Nation and Macalister (2010) claim this can be done through interpreting results of a placement test, and placement tests can be administered by Cambodian universities. As mentioned in the introduction chapter, students' English proficiency at universities is multilevel and each institution addresses these issues differently. Finally, *wants*, or *strategies analysis*, explores learners' preferences such as learning styles, strategies, or teaching methods. The present study incorporates the concepts of *necessities* and *wants* to analyse students' language priorities and stakeholders' preferences for teaching methods and other relevant issues in ESP course design.

## **2.4 Defining situation analysis**

In addition to conducting a needs analysis, environment or situation analysis is also considered important in ESP course design. Some researchers consider it as an extension of the concept of needs analysis (Graves, 2000). Situation analysis refers to an analysis of factors in the context of a planned or present curriculum project, that is made to assess their potential impact on the project (Basturkmen, 2010; Graves, 2000; Long, 2005; I. S. P. Nation & Macalister, 2010; Richards, 2001).

A range of factors can influence the implementation of the curriculum; these factors include societal, institution, teacher, learner, community, and adoption factors (Richards, 2001).

Societal factors mainly examine the views of the community and the stakeholders regarding the curriculum. This is also addressed in the present study. Project factors relate to the range of resources and staff who are available knowledgeable and can be involved in the course.

Teacher and learner factors include students' and teachers' language proficiency, their skills,

training qualification, beliefs and principles and teaching styles. Finally adoption factors ask questions such as *what advantages does the curriculum offer and how compatible is it with the institution?* The present study addresses some of these societal and practical issues in relation to the ESP course design. Specifically, they include teachers' qualification, teachers' lack of disciplinary knowledge, students' low English proficiency and teaching materials.

Factors in a curriculum project can be either positive or negative. An example of a positive factor is when a project consists of qualified teachers who are willing to contribute to the implementation of the new curriculum (I. S. P. Nation & Macalister, 2010; Richards, 2001). However, lack of qualified ESP teachers is considered to be one of the main challenges in ESP course implementation. ESP teachers generally lack knowledge of the learners' subject field, and this issue has been raised as a main challenge in ESP course design (Dudley-Evans & St John, 1998; Kim, 2008; Tudor, 1997). For example, Parkinson (2013) points out that many ESP teachers, who are not familiar with their students' field of studies find it hard to expose students to the discipline's discourse community. That is, ESP teachers find discipline discourse very diverse and complex (Spack, 1988). The issue of ESP teachers is also investigated in the current study, as it is a common challenge in ESP curricula.

Besides teachers' limited knowledge of students' specialisation, another challenge indicated in the field is the collaboration between ESP and subject-specific teachers. Collaboration could occur in the forms of cooperation, peer coaching and mentoring, and team-teaching (Almagro Esteban & Vallejo Martos, 2002; Lo, 2014). In this form, subject-lecturers and ESP teachers can work together to design the syllabus, prepare the teaching materials and co-teach the ESP classes. Although there has been literature indicating the benefits of this approach, which include helping students' learning and narrowing the gaps between discipline-specific knowledge and language learning, research has also highlighted challenges in implementing



this approach which include conflicts between both the two parties regarding field focus, approach (methodology), teaching timetables and attitudes (Ahmed, 2014; Almagro Esteban & Vallejo Martos, 2002; Arnó-Macià & Mancho-Barés, 2015; Barron, 2003; Chien et al., 2008; Dudley-Evans & St John, 1998; Dugan & Letterman, 2008; Horn, Stoller, & Robinson, 2008; Lo, 2014; Voogt et al., 2011). The differences result from their different perceptions and beliefs, including their roles, foci in teaching, their attitudes and willingness to collaborate, as well as power relationships (Lo, 2014). The issue of collaboration between content lecturers and English lecturers was examined in this study.

In addition to teachers' issues, students' issues to be taken into account include their general English proficiency and an indication of student enrolment. First, students' low general English proficiency is a challenge in ESP course design. Zohrabi (2011) pointed out that the issue of low general English proficiency is common to both students and graduate employees. For example, Atai and Shoja (2011) reported ESP teachers' complaints about students' low general English proficiency in ESAP courses in the Iran undergraduate context. In many cases, to comprehend the reading texts, teachers were requested to translate vocabulary and terminology of the target language into L1, requests which indicated the low proficiency of the students (Mazdayasna & Tahririan, 2008). Regarding student enrolment, Basturkmen (2010) discusses a case of an ESP course, in which teachers had speculated that the course would interest students, but after the implementation, only a few students enrolled into the course. Therefore, involving relevant stakeholders especially students in foreseeing the future enrolment rates and expressing their interest in enrolling in such a course can assist course designers in deciding whether the course is worth pursuing.

Designing appropriate teaching materials that correspond to the students' needs has been reported as another challenge for ESP course designers, which requires expertise in the field

and is time consuming. However, Kim (2008) argues that ESP course designers do not need to be experts in the field. Their intended role is to select and evaluate the available ready-made materials such as commercial textbooks. In other words, available materials can be adapted to meet the students' needs. Alternatively, Orr (2010) recommends ESP specialists work with faculties from the specialised departments to discuss the criteria and English language skills that are appropriate and necessary for the targeted students. Aligning with suggestions from the literature, this study investigated stakeholders' opinions about the design of ESP teaching materials.

Other challenging factors in course design include time and resources. Ferguson (1997) warns that the successful innovation of a curriculum is time consuming, as it is an ongoing process. Wedell (2009b) similarly argues that curriculum development goes through a long process, which includes four hierarchically arranged levels: familiarisation, socialisation, application and integration. In addition to the burden of time, financial and human resources also need to be in place during the process of implementing a new curriculum. In other words, a new feasible curriculum must be supported financially and politically within an institution or the government (Waters & Vilches, 2001). The current study addresses such issues as time factors, institutional constraints and measures to address these limitations.

## **2.5 Research into needs and situation analysis in ESP course design**

Many empirical research studies into needs and situation analysis relating to ESP course design have been conducted in the two main ESP branches (English for academic purposes and English for occupational purposes) within various specialisations (science, engineering, hospitality and business) around the globe. This section begins with a review of published articles in needs and situation analysis in ESP course design research around the globe,

including ASEAN countries and two on Cambodia, with an emphasis on science, technology and engineering fields, as science is the main focus of this present study.

In South Africa, Jackson et al. (2006) examined the writing and reading tasks assigned to undergraduate science students at the University of KwaZulu-Natal. Questionnaires were employed with 47 academic staff from 14 disciplines including Agriculture, Biochemistry, Biology, Botany, Chemistry, Computer Science, Dietetics, Geography, Geology, Microbiology, Mathematics, Physics, Statistics and Zoology. The findings revealed that laboratory report writing was a common genre for writing assignments; however, it was found that there was a mismatch between assigned reading and written assignments. That is, students were assigned to read textbooks, but they were asked to write laboratory reports. The study sought a single perspective only from the academic staff but not students and industry stakeholders. In the research reported here, two perspectives: academics and professionals are considered, which make the study richer.

In the UK, Smith and Thondlana (2015) investigated the tasks demanded of international students in performing a group project to determine the EAP skills and academic competencies the students need. Content analysis was used to examine the project documents and two senior lecturers were also interviewed. The findings revealed a range of skills and competencies that students need, including skills in teamwork, reading, speaking, listening and writing. The reading tasks include briefing the project and guidelines, research in recommended readings, library and websites and critical reading. Speaking and listening are needed for group discussions, negotiations, meetings, intercultural communications, presentations and flexible thinking. Writing tasks comprise writing minutes, reports and PowerPoint presentations. This research helps form the conceptual framework of the present

study regarding the academic competencies needed for the science undergraduate students in Cambodia.

In Palestine, Alastal and Shuib (2012) investigated the target needs of the academic English undergraduates of the Faculty of Applied Science at Al-Aqsa University with 180 students from six departments: Chemistry, Physics, Biology, Technology and Applied Sciences, Mathematics and Computers. The needs analysis framework of Hutchinson and Waters (1987) was used to design the questionnaires to investigate undergraduates' present academic English language proficiency, the academic English skills necessary for their academic study and the English skills they desired to learn. The findings revealed that reading was the main necessary skill. Other necessary microskills identified include reading textbooks, general reading comprehension and note taking. The needs analysis framework used by Alastal and Shuib (2012) was helpful in developing the needs analysis framework that is used in this study.

In Taiwan, Chia et al. (1999) identified the English language needs of medical college students at Chung Shan Medical College. The questionnaire was completed by 349 medical students and 20 faculty members. The findings show that English language was perceived as important for students' academic studies and for their future professions. While a mixture of both English and Chinese were found to be used in the classroom, the most important macroskill identified was reading, followed by listening, writing and speaking in this order. Reading skills include improving reading speed and comprehension of textbooks and journal articles in English. The preferred listening skill was comprehension of medical terms in lectures and reports and research papers were reported as necessary written tasks. Students were found to possess limited vocabulary, particularly medical terminologies. The study revealed that the preferred materials for the course were incorporation of discipline specific

materials such as medical field genres, medical research journals and reports and other materials relevant to subject matter studies. The research is relevant to the context of the current study as English is important for both undergraduate students' current studies and future jobs in Cambodia.

In the US, Boshier and Smalkoski (2002) conducted a needs analysis to develop a course in healthcare communication for immigrant students enrolled in the Associate of Science degree nursing program, in response to what had been identified as students' area of difficulty. To gather the information, researchers interviewed five faculty members and five ESL nursing students and also observed four students. The study found that ESL nursing students had the most difficulty in being assertive with clients, colleagues and nursing instructors, using appropriate paralinguistic features of communication and non-verbal communication skills, making small talk and understanding cultural differences. The research focuses on students' workplace communication but not academic skills so is of limited relevance to this study.

In Iran, Mazdayasna and Tahririan (2008) investigated medical science undergraduate students' foreign language needs in faculties of nursing. The study recruited three groups of stakeholders: 681 undergraduate students, 168 subject-specific instructors and 6 EFL instructors. The data were collected through interviews and questionnaires. The findings showed students' preferences of mastering the foreign language before attending their specialised courses. Other issues found included students' dissatisfaction with the class size, teaching methodology, assessment and textbook's content. The findings also revealed subject-specific instructors' dissatisfaction over their students' low language proficiency. The study suggested the existing ESP courses' goals are unrealistic and do not equip students with necessary language skills to be able to deal with their specialised discipline; thus, there was a need for consultation and collaboration among relevant stakeholders, including the discipline

departments, to identify students' needs. This practice has been absent in many such cases in Iran which have led to dissatisfaction of relevant stakeholders, particularly teachers and students on issues such as teaching methodology, teaching materials and students' low English proficiency, which the present study investigated (Mazdayasna & Tahririan, 2008).

In Australia, R. Oliver et al. (2013) conducted a Task-Based Needs Analysis (TBNA) at a vocational education and training program for Australian Indigenous students to identify the actual language and literacy tasks that students are likely to encounter in various workplace settings. Non-participant observation, unstructured interviews and document analysis were used to collect data. R. Oliver et al. (2013) found that students need to further develop their oral language skills to communicate with non-Aboriginal supervisors, colleagues and clientele or members of the public. Oral language skills for engaging socially at work were also found to be essential for students. Overcoming feelings of shame is another skill students lacked when interacting with non-Aboriginal people at work.

Another study in Australia was conducted within the workplace setting. Crosling and Ward (2002) investigated the workplace oral communication needs and uses of business employees who graduated from Monash University. The questionnaire was completed by 24 employers of the various companies employing Monash graduates. They found that the regular forms of oral communication included informal work related discussions such as building team relations, following instructions and discussion in meetings. These two studies assisted in forming a picture regarding employees' workplace skills for this present study.

In China, Xie and Adamson (2015) evaluated two EOP training programs in the Chinese workplace context. They found that although there were adequate textbooks and supplementary materials for training students in oral and written communication skills, the programs lacked supplementary materials on professional terminology and lack of authentic

workplace documents. The course content that responded to students' needs was found to be the integration of authentic materials, note taking, daily and email communication with customers, conference calls, report writing, professional vocabulary and skills in participating in technical training overseas.

In Taiwan, Spence and Liu (2012) analysed the tasks of engineers at a semiconductor manufacturing company. The findings revealed that engineers needed to read a lot of daily emails, office documents, project documents and writing instructions but fewer professional texts and manuals. The most frequent writing tasks include memos, PowerPoint presentations, project proposals, minutes and business letters. The main tasks for speaking and listening were found to be meetings, presentation, teleconferencing and seminar, telephone communication and face-to-face communication.

A few research studies have been conducted in the workplace setting. In Hong Kong, the study conducted by Chew (2005) investigated the communicative tasks in English and Chinese that were required for new graduate employees in various departments in four banks. Sixteen employees were interviewed and completed the questionnaires. The findings reveal that the communicative tasks that graduate employees were required to perform in English were written communication and translation, reading and oral communication with non-Chinese speakers. Written and translation tasks included memos, minutes of meetings, reports, rules and regulations for bank customers and opinion and complaint letters from customers. Reading tasks involved gathering information from research reports, brokers' reports and technical and computer manuals. Interestingly, the results revealed the strongest support for on speaking skills, which include presentation, oral English for daily use and social interaction, negotiation skills and business communication skills.

Another study in Hong Kong conducted by Evans (2012) investigated email tasks in the Special Administrative Region's industries to design email tasks for the business English classroom that narrow the gap separating the office and the classroom. Thirty hours of interviews with English-using Chinese professionals and analyses of four case studies and fifty email chains were conducted. The findings showed that the internal emails were simple and straightforward and that the emails with clients tended to be rather formal. The study suggested integrative teaching of the four macroskills because they are interdependent and embedded in email communication.

So-mui and Mead (2000), in Hong Kong again, explored the workplace English needs of textile and clothing merchandisers who communicate in the international market places. Data were collected through questionnaire surveys, telephone interviews, analysis of authentic correspondence and visits to the workplace. The findings revealed that written communication often is the following up measure on an order such as advising order status and clarifying order queries. Another interesting finding was the different focus between employees and employers. That is, graduate employees wanted grammatical accuracy, whereas the employers prioritised correctness of content and appropriate tone. The other skills reported were presentation of message, paraphrasing, grammatical accuracy such as incomplete sentences, tone and business jargon. From the findings, teaching and learning materials were designed for the business English course to suit the context and needs of the workplace. The communication tasks found in the studies by Chew (2005), Evans (2012) and So-mui and Mead (2000) are also applicable to other Asian contexts, including Cambodia especially in multinational workplace settings.

The above-mentioned empirical research studies involved either academic stakeholders such as students and teachers, or industry stakeholders such as employers. In other words, the



studies either explored tasks students needed to perform in their academic studies, or tasks they would be encountering in the future. However, there is limited research in ESP course design in the fields of science and technology that integrates the perspectives of both academics and industry, so this presents a good reason to carry out for this present research. Both academic and industry stakeholder groups were included in this project to obtain views from both sides.

## **2.6 Research into needs and situation analysis in ASEAN countries**

In the context of the ASEAN member countries, empirical research into ESP course design is limited. Among the ten countries, published ESP research is only available in a few, including Thailand, Vietnam and Cambodia. In Thailand, Bosuwon and Woodrow (2009) conducted a needs analysis to design a problem-based reading course for undergraduates at the University of the Thai Chamber of Commerce. A questionnaire, based on a content analysis of 13 business communication textbooks, was delivered to 102 graduate students, 16 instructors and 245 employers and employees in the fields of airline, hotel and tourism. The findings reveal that various topics had prominence, including business etiquette and business communication. These were the topics that were used to design the course objectives and contents reflected in the textbooks. However, this study lacked depth, as the questionnaire findings were not further investigated. The current study addresses this type of weakness by following up on questionnaire items with a qualitative data analysis.

Vo et al. (2016) conducted a small-scale research project on a Vietnamese university investigating the English communication needs of IT graduate employees in a multinational setting. The study employed a qualitative enquiry combining semi-structured interviews, observations and post-observation discussion with 14 IT graduate employees. The study revealed that there was a mismatch between English instruction including materials and

methods at the university and communication in at the workplace. The study recruited only academic stakeholders, especially English or ESP teachers and students were not recruited.

Still, there is a lack or absence of ESP course design research in most ASEAN countries, especially any that addresses needs and preferences of stakeholders before the commencement of an ESP course (Vo et al., 2016). Large scale studies of these matters are absent. This means that this literature gap relating to ESP course design in the ASEAN context should be addressed.

Similar to other ASEAN member countries, Cambodia lacks published research studies into ESP course design. In the higher education context, there have only been two small scale studies and of limited scope on needs and situation analyses; each had placed emphasis on the fields of science and technology. However, both studies recruited a small number of participants from the academic setting, whereas this present study incorporates many participants from both the academic and industry fields.

Macalister (2007) explored students' language needs in order to design an appropriate ESP course for students at the Institute of Technology of Cambodia. The research was a case study of a negotiated syllabus among three groups of stakeholders: an English teacher, the head of an engineering department and students from five different engineering majors: food technology, electrical, rural, industrial and mining and civil engineering. The findings revealed that the English teacher was unwilling to take the role of an ESP teacher. He justified this by stating that he was "an English teacher, not an engineering teacher" (Macalister, 2007, p. 38). Interestingly, the findings show that the department head had no idea about the necessary language skills for the students. The findings, from the students' group discussion however, highlighted the need to incorporate several topics that were related to their disciplines into the course. From the findings, the researcher concluded that since there was

overlap in topics, the teacher did not need to design five separate ESP types, one for each of the five disciplines. The study shows the importance of incorporating various stakeholders in situation and needs analysis before any course design is embarked on.

The second needs and situation analysis research in the Cambodian higher education context is a course design project, jointly organised by language teachers from the Faculty of Science, Royal University of Phnom Penh and Victoria University of Wellington. Macalister and Sou (2006) conducted needs and situation analysis to design an elective course of English for Science and Technology. The researchers analysed existing syllabus documents; employed structured interview with a seven-item questionnaire with eight lecturers from five university departments; and used the seven-item questionnaire with 15 upper-intermediate students from seven different specialisations. Most teachers and students identified reading and writing in English as priorities for the new course. The results also revealed the participants' concern about improving students' technical vocabulary and critical thinking skills. Another matter of concern found was that English lecturers were not sufficiently qualified to teach the EST courses, as they lacked specialist subject knowledge. The environment analysis also showed that, although English teachers were qualified, having either relevant undergraduate or postgraduate degrees to teach English as a foreign language, they lacked the time and confidence to prepare their own materials, thus a commercial textbook was preferred.

In Cambodia, these two studies sought perceptions only from the academic stakeholders. The present study is the first comprehensive research that has recruited both academic and industry stakeholders to conduct needs and situation analysis of ESP course design in the Cambodian higher education context. It is also the first study of its kind to recruit a large number of participants and investigates their preferences on several aspects of ESP course

design, such as syllabus, scope, tasks, skills and challenges in the Cambodian HEI context.

This study has wider application to other Asian contexts in similar situation.

From the relevant literature reviewed above, the conceptual framework of the present study is formed (see Figure 3 next page). The conceptual framework is used to design the instruments of this study. This is further explained in the Methodology chapter as it relates to questionnaire and interview design.

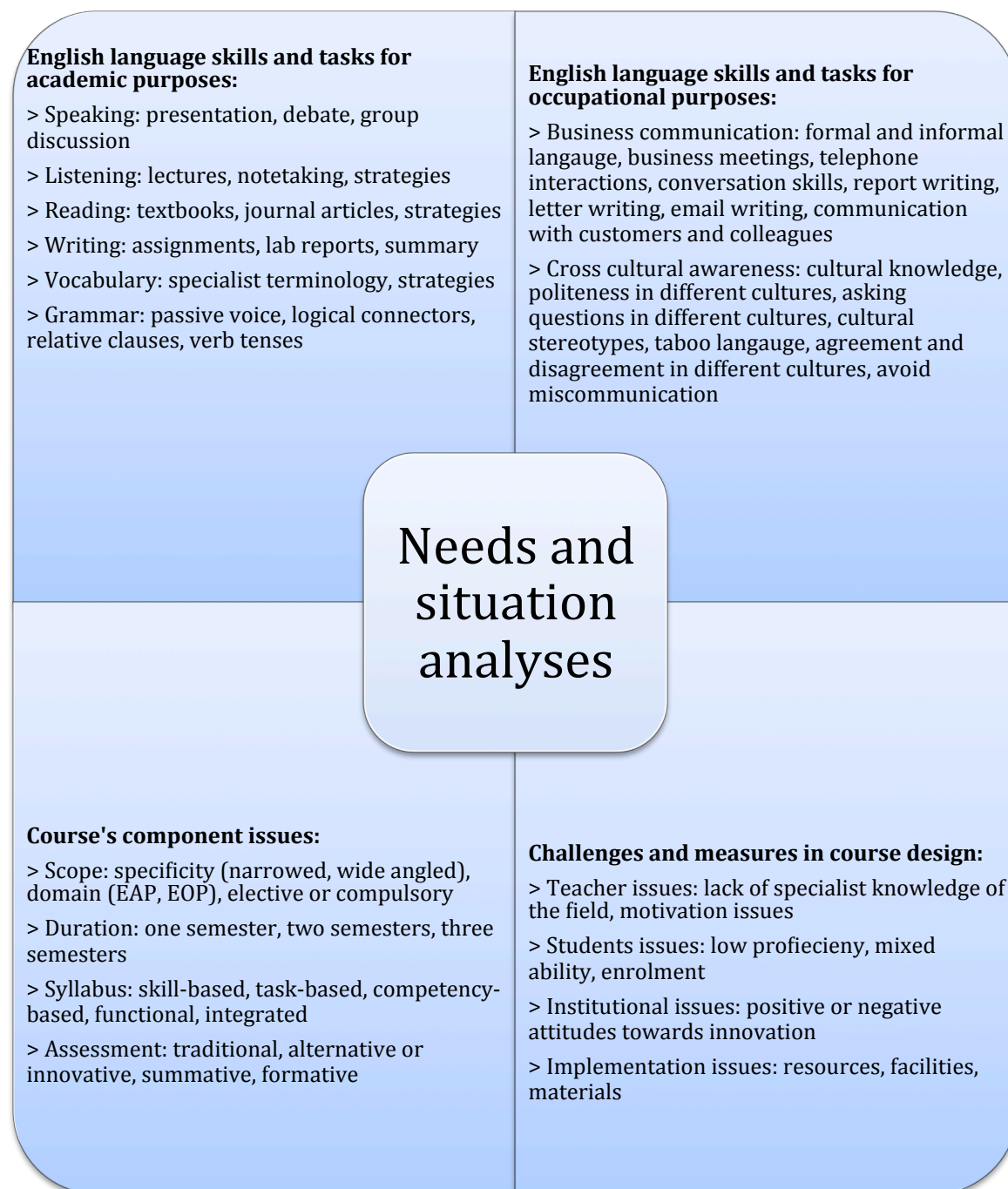


Figure 3 Conceptual framework of the study

## **2.7 Summary**

In this chapter the conceptual and theoretical frameworks of the study are discussed. The chapter began with an overview of the ESP field, including its definitions, characteristics and branches. Then the chapter discussed curriculum, and ESP course design components and process, including several elements, such as syllabus, needs analysis, situation analysis, theoretical orientation, assessment, teaching materials and evaluation. Then, the study's contribution to needs and situation analyses in the ESP course design in Asia, specifically Cambodia, is also presented.

The study proceeded to define needs and situation analyses as two essential components of ESP course design (Richards, 2001). The chapter explained how the concepts of needs and situation analyses were employed in this study. Finally, the last section reviewed research on need analysis in the field and in the Asian context. The review revealed that most needs and situation analysis studies are small scale and either focused on students' academic or professional ESP needs (e.g., Macalister, 2007; Vo et al., 2016). This is one of the major contributions of the present research to the ESP literature. It also revealed the need for a comprehensive needs analysis in the HEI Cambodian context that can be applied in Asian contexts planning to develop ESP courses. The studies reviewed also help form the conceptual framework of this study.

## CHAPTER 3

### RESEARCH METHODOLOGY

This chapter consists of five sections. Section 3.1 discusses the methodological framework for the study, which employs a mixed methods design. It defines the characteristics, and discusses the advantages, limitations and ends with the rationale for the choice of this design. Section 3.2 offers a justification for the choice of research instruments and describes the participants and research site for the quantitative and qualitative phases. Section 3.3 describes data collection in both phases. Section 3.4 discusses the analytical techniques in processing the data. Section 3.5 concludes with a summary of the chapter.

#### **3.1 Methodological framework**

As mentioned in the introduction and literature review chapters, one of the contributions of this study to the field is its combination of quantitative and qualitative methods in needs analysis studies. The mixed methods design has recently gained much prominence in the field of language teaching research and especially in language for specific purposes (Gollin-Kies et al., 2015). The section below discusses its definition, the main features and types of mixed methods design.

##### *3.1.1 Characteristics of the mixed method design*

A mixed methods research approach is defined as a procedure involving the collection and analysis of both quantitative and qualitative data to answer a research problem (Creswell & Plano-Clark, 2011): it has its own unique characteristics.

A research approach is considered to be a mixed methods design when the researcher:

- collects and analyses persuasively and rigorously both qualitative and quantitative data (based on research questions);
- mixes (or integrates or links) the two forms of data concurrently by combining them (or merging them), sequentially, by having one build on the other, or embedding one within the other;
- gives priority to one or to both forms of data (in terms of what the research emphasises)
- uses these procedures in a single study or in multiple phases of a program of study;
- frames these procedures within philosophical world views and theoretical lenses; and
- combines the procedures into specific research designs that direct the plan for conducting the study (Creswell & Plano-Clark, 2011, p. 5).

This research employed both qualitative and quantitative data collection methods, as specified in the discussion above. It mixed the data by utilising a specific mixed methods design systematically, which will be discussed below.

### *3.1.2 Strengths and limitations of the mixed methods design*

While the mixed methods design has its advantages over a single method applied alone, it is important to make note of its benefits and limitations in this research. One of the well-known advantages of mixed methods research is that a research problem or question can be more clearly explored by the use of both qualitative and quantitative methods than by either one used alone (Creswell, 2012). In other words, when either qualitative or quantitative data cannot adequately answer the research questions, the mixed methods design is to be conducted. Another strength is that each method reinforces and cross-validates the other and



provides the most informative, complete, balanced and useful research results (J. D. Brown, 2011; Fraenkel, Wallen, & Hyun, 2012). For example, qualitative data can be used to triangulate or explain quantitative significant results, outlier results, or surprising results.

However, the mixed methods design also has its limitations. The notorious weaknesses are that it is both time consuming and resource demanding (Creswell & Plano-Clark, 2011; Fraenkel et al., 2012). In addition, Fraenkel et al. (2012) suggest that researchers should have experience in both quantitative and qualitative research methods in order to conduct this type of design accurately and appropriately. To complete this research project, the researcher received training to employ this design and had allocated sufficient timeframe and funds.

### *3.1.3 Types of mixed methods design*

Researchers of the educational field employ different types of the mixed methods. According to Creswell and Plano-Clark (2011), there are four basic mixed methods designs, which are typically employed by educational researchers, namely the convergent parallel, explanatory sequential, explanatory sequential and embedded designs (see Figure 4). This section discusses the four basic mixed methods designs and Section 3.1.2 justifies the choice of design employed in the current study.

In a convergent (or parallel) mixed methods design, both quantitative and qualitative data are collected independently and analysed separately, and both datasets are compared to see whether they support or contradict each other (Creswell, 2012). Both quantitative and qualitative datasets are often equally valued by convergent mixed methods researchers. One of the main advantages of this research design is that while the quantitative data offers generalisability, qualitative data inform the research context or setting. However, the

researchers might find it difficult to merge and separate the quantitative and qualitative datasets.

The next mixed methods design, explanatory sequential design (or a two-phase model), according to Creswell and Plano-Clark (2011), is a mixed methods approach in which the researchers begin by conducting a quantitative phase and follow up on specific results with the qualitative phase. In other words, quantitative and qualitative data are sequentially collected in two phases, beginning with quantitative data collection and then collecting qualitative data to explain or elaborate the quantitative findings (Creswell, 2012). One of the main advantages of this design is that the quantitative and qualitative phases are identified clearly. Nonetheless, it might be challenging for researchers to formulate qualitative questions because they are supposed to further explore specific findings from the quantitative phase. Another challenge is that it is labour-intensive, requiring the researchers' expertise to collect both quantitative and qualitative data (Creswell, 2012).

Another mixed methods design is the exploratory sequential design. This design is the exact opposite of the explanatory sequential design in terms of the sequence of data collection phases. The exploratory researchers emphasise and collect qualitative data first and then quantitative data (Creswell, 2012). This research design helps researchers obtain grounded data from the participants first rather than use a pre-determined set of variables. However, the process of this design is time consuming, requiring extensive time for designing and testing the instrument. Another difficulty is that the researchers may find it difficult to select certain qualitative findings to be included in the quantitative phase (Creswell, 2012). In other words, to generalise the qualitative findings, the researchers need to choose a number of findings from the qualitative phase to test with a larger sampling size.

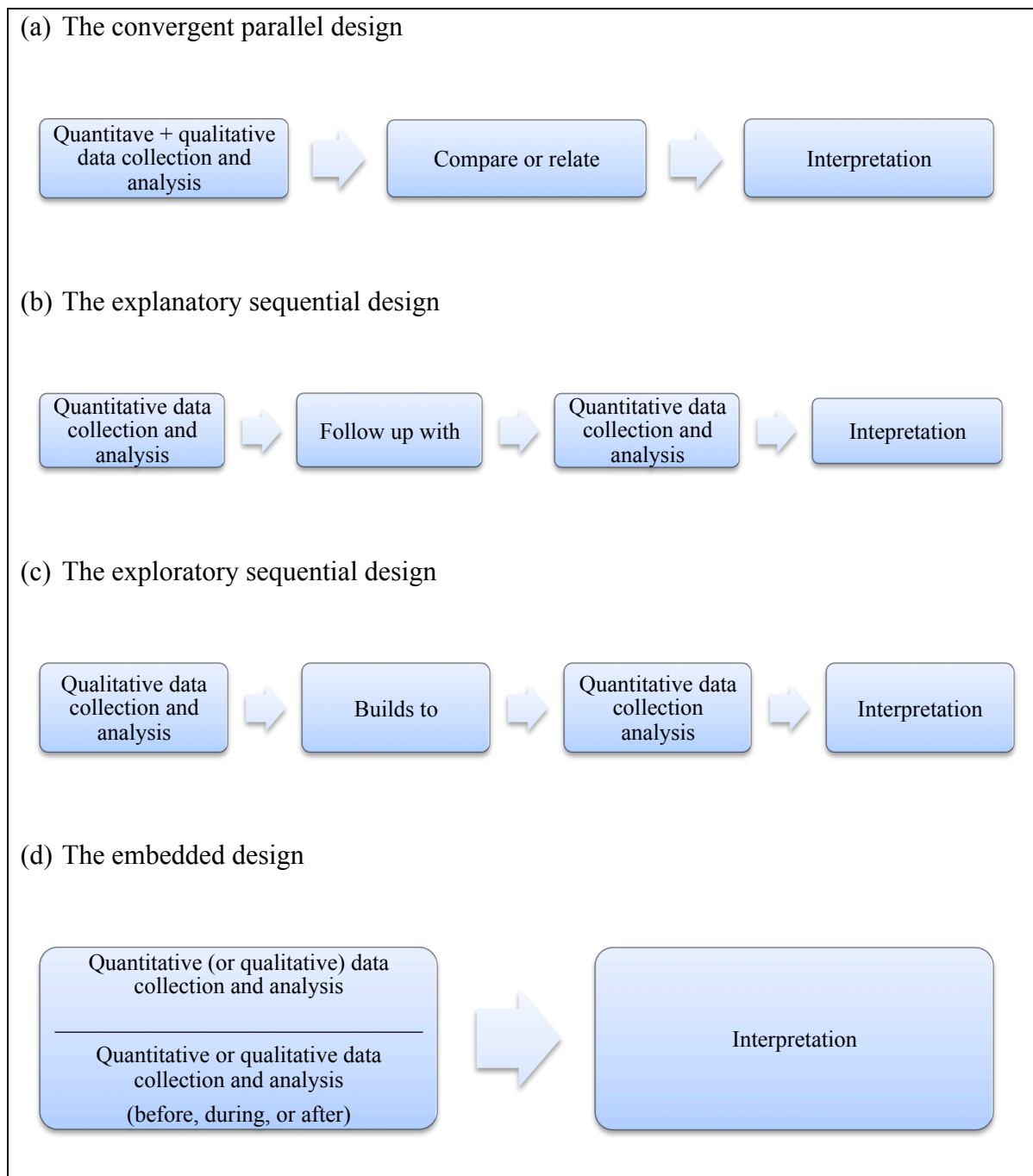


Figure 4 Types of mixed methods design (Adapted from Creswell and Plano-Clark (2011, p. 69))

Embedded design is the last basic type of mixed methods design, which is similar to both the parallel and the sequential design, but it is also distinct from both (Creswell, 2012). As with the parallel and sequential designs, embedded researchers might collect quantitative and qualitative data simultaneously or sequentially, but separately analyse the two datasets, and

the two forms of datasets answer different research questions. This research design offers researchers to the advantages of both quantitative and qualitative data. For example, the experimental data can be collected through quantitative data collection, while individuals' experience type data can be effectively obtained through qualitative data collection. However, the researchers may find it challenging to compare the two forms of data since they are intended to answer different research questions.

To select the most appropriate type of mixed methods design the researcher consulted the literature. According to Creswell and Plano-Clark (2011), the explanatory sequential design is one among the most popular mixed methods approaches. To better understand the explanatory sequential design, the next subsection sets out its main principles and the rationale for the choice of this design type in this research project.

#### ***3.1.4 Rationale of explanatory sequential mixed methods design***

An explanatory sequential design (or a two-phase model), according to Creswell and Plano-Clark (2011), is a mixed methods approach in which the researchers begins by conducting a quantitative phase, and follows up on specific results with the qualitative phase. That is, quantitative and qualitative data are sequentially collected in two phases, beginning with quantitative data collection and then collecting qualitative data to explain or elaborate on the quantitative findings (Creswell, 2012). This study follows the procedure in the diagram below (see Figure 5).

The explanatory sequential design was employed because it had more strengths than weaknesses in terms of answering this study's research questions. Creswell (2012) considers this design type as the most popular mixed methods approach in educational research. The

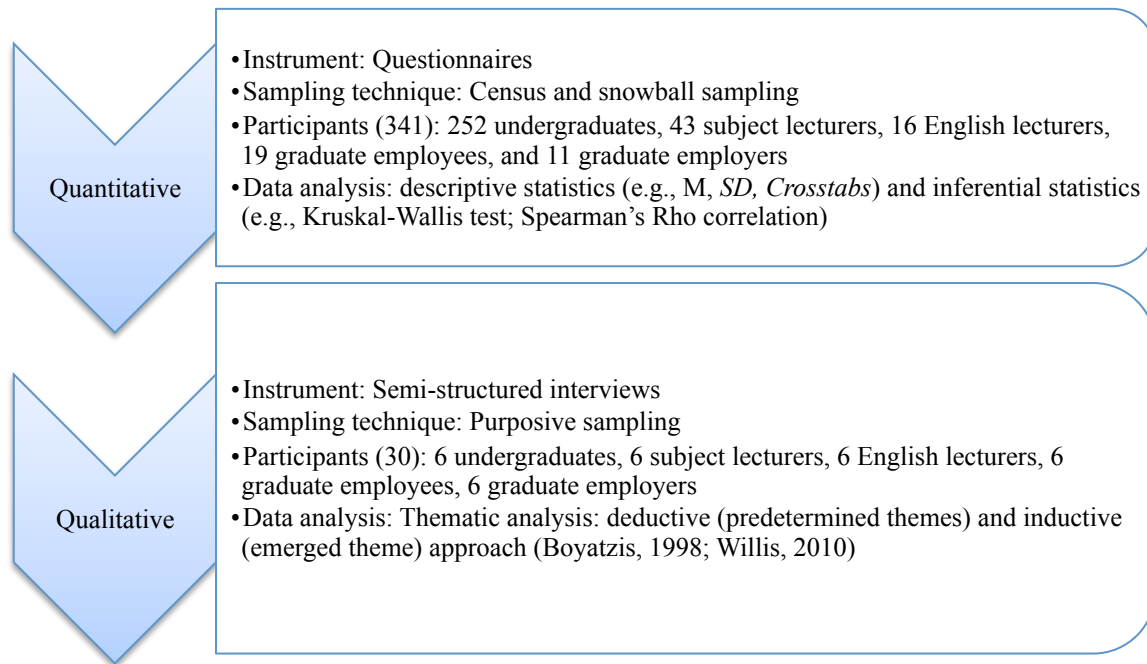


Figure 5 The explanatory sequential design diagram and procedure for the present study

popularity of this design is due to its efficiency compared to the other types of mixed methods design.

The implementation of this reduces the need for a team of researchers because each of the two phases is executed separately (Creswell & Plano-Clark, 2011). In other words, the data of the quantitative phase are collected before the collection of the qualitative data. Another strength is its explanatory nature. The quantitative findings can be explained and explored using the qualitative phase, which makes the findings less susceptible to bias that can enter with the quantitative approach. This design is ideal when some findings of the quantitative phase need explanation, and this can be done in the qualitative phase. It was evident that the sequential data collection process would be most suitable for this project. Moreover, it was recognised as a method that enabled exploration of the topic, and this was achieved in the qualitative phase.

However, determining which quantitative findings are to be explained in the qualitative phase can be a challenge for the researcher. To overcome this challenge, Creswell and Plano-Clark

(2011) suggest a number of options. First, it is important to examine the quantitative findings that are unclear and need further exploration. Another option is to select statistically significant or unexpected results. Overall, the explanatory sequential mixed methods design was appropriate in addressing the research questions within the timeframe of this research. For this study, some interview questions aimed to elaborate the quantitative findings. Moreover, the unexpected quantitative findings were also used as guidance in designing other interview questions to be explored in the qualitative phase. See Section 3.2.1.2 for the description of the questionnaire, and 3.2.2.2 for the description of the interview questions.

### *3.1.5 Case study approach*

As explained in the literature, a contextual approach was clearly the most appropriate method for this study. Thus, the researcher employed a case study research design. Creswell (2007) defines a case study research as an investigation of an issue or a phenomenon in-depth using single or multiple cases within a real-world context. A case study has been a popular research method in a number of fields, including education and psychology, because this method enables an in-depth and holistic exploration of a case such as a small group of people or an organisation (Yin, 2014) and using multiple sources of data to address challenging research questions (Remenyi, 2012).

Researchers distinguish among four types of case study designs: single-case (holistic), single-case (embedded), multiple-case (holistic) and multiple-case (embedded). Each design type has its own strengths and limitations. Yin (2014) offers a comprehensive rationale for these four case study types. After reviewing all the strengths and weaknesses of each case study design, single-case (embedded) case study is the most appropriate for the present study. The single-case (embedded) design refers to an investigation of many embedded variables or subunits within a case (Remenyi, 2012). In the study reported here, the aim was to obtain the

perceptions of multiple stakeholders about the development of an ESP course. The case study involved multiple stakeholders (subunits), within a Cambodian HEI and specifically the Faculty of Science (case study). The only stakeholders who could be considered “outsiders” were employers, whereas all other stakeholders were part of the institution. According to Yin (2014), the subunits enhance the insights into the single case. In addition, to the collection of rich and in-depth data, the explanatory sequential mixed methods design (see Section 3.1.4) was employed and the recruitment of multiple research stakeholders (see Section 3.2.4) in this study was used to obtain appropriate data for the case study.

## **3.2 Research design**

To elaborate the explanatory sequential mixed methods design, this section discusses research instruments and participants for the quantitative and qualitative phases.

### *3.2.1 The quantitative phase*

A variety of instruments can be used in the quantitative phase for needs and situation analyses, including document analyses, questionnaires, self-checklists, structured observations, structured interviews, achievement tests and aptitude tests (Basturkmen, 2010; Huhta et al., 2013; Long, 2005; Richards, 2001). Fraenkel et al. (2012, pp. 125-130) offer comprehensive descriptions of each instrument. Among all the instruments, the questionnaire is the most appropriate tool for this study; Section 3.2.1.1 offers the rationale for the choice of the questionnaire, and Section 3.2.1.2 discusses the questionnaire construction.

#### *3.2.1.1 Rationale for the choice of questionnaires*

Questionnaires were chosen as research instruments for the quantitative phase. According to J. D. Brown (2011, p. 6), questionnaires refer to “any written instruments that present

respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from among existing answers”. For needs analysis into second language research studies, questionnaires are among the most common instruments employed (Long, 2005; Mackey & Gass, 2005; Richards, 2001) because of their advantages. One of the well-known benefits is the inexpensive administration of the questionnaires (L. Cohen, Manion, & Morrison, 2011; Dornyei, 2003; Gillham, 2008; Kumar, 2014; Long, 2005; Walter, 2010). That is, the data collection process is one that saves the researchers’ time and money because they can meet a large number of participants within a particular venue and time. For example, the researcher needs to spend money for their travel only once in order to administer the questionnaires to many participants.

Additionally, questionnaires offer anonymity. When asking research participants about sensitive questions, the researchers tend to obtain accurate answers from the participants because participants are advised and know their identity is kept confidential (Kumar, 2014). Gillham (2008, p. 6) offers a comprehensive list of advantages of the questionnaires, which includes:

- Low cost in time and money
- Easy to get information from a lot of people very quickly.
- Respondents can complete the questionnaire when it suits them.
- Analysis of answers to closed questions is straightforward.
- Less pressure for an immediate response.
- Respondents’ anonymity.
- Lack of interviewer bias.
- Standardisation of questions (but true of structured interviews).
- Can provide suggestive data for testing a hypothesis.



Although questionnaires offer quite a large number of advantages, their limitations were also considered. One of the notorious disadvantages of questionnaires is a low response rate (Gillham, 2008; Kumar, 2014). The findings might not represent the target population if the responses are few or when the participants who return the questionnaires have different views from the ones who do not return the questionnaires (Mackey & Gass, 2005). Kumar (2014) comments that sometimes the return rate can be as low as twenty per cent. However, when questionnaires are administered to a large group of participants, the response rate is usually no longer an issue (Kumar, 2014). To attract participants to complete the questionnaires, Richards (2001) suggests that researchers follow good questionnaire design principles. This researcher reduced the possible downside of a low return rate by administering the questionnaire onsite himself for the undergraduate students, subject lecturers and English lecturers and by following up with the participants through phone calls and text messages.

Another limitation to questionnaires is lack of depth in an investigation of issues (Dornyei, 2003). Some findings in the quantitative phase may need further exploration, but the questionnaires do not offer this opportunity (Kumar, 2014). This challenge was resolved through implementation of semi-structured interviews in the second phase (Kumar, 2011; Seidman, 2006). To obtain in-depth information, the researcher probed some quantitative findings further in the qualitative phase. The use of triangulation counterbalanced the disadvantages of both instruments.

### *3.2.1.2 Description of the questionnaires*

The design of the questionnaire was based on a number of principles. First, an appropriate length was considered in addition to the time required to fill it in. This was based on the suggestions of Dornyei (2003) suggesting the questionnaire length be of no more than thirty minutes. The design of the questionnaire was another important consideration. The

questionnaire followed an orderly design organised in sections and offering a variety of questions (Dornyei, 2003).

In the design of questionnaires of the present study, a combination of Likert scale, multiple choice and open-ended questions was employed. Likert scale is common type of attitude scale used in educational research, used to measure participants' preferences by asking them to choose from a number of statements, whereas Multiple choice questions measure participants' opinions, by offering them several choices to choose from (Fraenkel et al., 2012). However, Fraenkel et al. (2012) point out that the choice options that accurately represent participants' opinions might be missing, so adding an "other" option and open-ended questions allow participants to write down their individualised opinions, which usually the researcher have not anticipated.

The questionnaires consisted of five sections, comprising twenty-seven items (see Appendices E, F, G and H). After the questionnaire title and brief overview of the research study, Section A aimed to gather the demographic data of the participants including gender, department, year level, and graduation year. Section B sought participant perceptions of the importance of the existing English program and the prospective ESP course, consisting of five items (B1 to B5). Section C covered the language skills that the students needed for their academic studies and future careers, comprising nine items (C1.1 to C1.7 and C2.1 to C2.2). Section D, containing thirteen items (D1 to D12), assessed ESP course-related issues, including preferred domains, duration, syllabus, assessment, challenges and measures needed in designing the course. Section E asked for the contact details of those who were willing to participate in the qualitative phase.

Each questionnaire section responded to specific research questions. Sections B and D addressed the first research question. Section C addressed the third research question, and

section D addressed the second and fourth research questions. Specifically, questionnaire items B1 to B4, D8 and D9 measure the participants' opinions about the necessity of ESP course development. Questionnaire items C1.1 to C1.8, C2.1 and C2.2 measure undergraduate students' ESP needs. Questionnaire items D1 to D5 and D8 measure ESP course scope. Questionnaire items D6 and D7 measure ESP course syllabus, testing and assessment. Questionnaire items D10 to D12 measure the challenges and the measures needed in designing an ESP course.

The questionnaires were developed based on the framework of this study (see Figure 3, p. 58). Specifically, questionnaire items A1 and A2 in Section A were adapted from the questionnaire of the study of Huhta (1999). Questionnaire items B1 to B4 in Section B were adapted from the research questionnaire conducted by Chia et al. (1999) and Al-Tamimi and Shuib (2010). Questionnaire items C1.1 to C1.6 and C2 in Section C were adapted from the questionnaire of Al-Tamimi and Shuib (2010) and Gravatt, Richards, and Lawis (1997). Questionnaire items C1.7 and C1.8 were adapted from Roberts (1998) and Martin and Nakayama (2013) and questionnaire item C1.8 was adapted from Huhta (1999) and Huhta et al. (2013). Questionnaire items D1 to D12 were adapted from the questionnaire of Kim (2008). Finally, E1 and E2 in Section E were adapted from the questionnaire of Gravatt et al. (1997). The use of questionnaire items from other studies improved the validity of the questionnaire (Dornyei, 2003).

The questionnaire consisted of two versions, one in English and the other in Khmer (the official language of Cambodia). The questionnaires in Appendix E (English version) and F (Khmer version) were for academic stakeholders, namely undergraduate students, subject lecturers and English lecturers, whereas the questionnaires in Appendix G (English version) and H (Khmer version) were for industry stakeholders, namely graduate employees and

employers. Based on the data collection, all the English lecturers chose to answer the English version; whereas the other four stakeholder groups, namely undergraduate students, subject lecturers, graduate employees and employers selected the Khmer version.

To establish the reliability and validity of the questionnaires, they were piloted, tested and polished (Dornyei, 2003; Vaus, 2002). The questionnaires were piloted with ten English lecturers, one subject lecturer and five graduate employees. The pilot results assisted in polishing the questionnaires, including revision of the word choices, which helped ensure that the final versions are reliable and valid. For example, the pilot participants suggested keeping some English terminology in the Khmer questionnaire version such as verb tenses: present simple; syllabus types: skills-based; testing and assessment types: quizzes. Additionally, they suggested adding examples for some terms, including listening and vocabulary strategies. In addition, to avoid ambiguity, negative constructions and double barrelled questions, several potential hazardous words such as “only” and “all” were carefully examined (Dornyei, 2003).

### *3.2.2 The qualitative phase*

Several instruments can be used in the qualitative phase for needs and situation analyses, including interviews, observations, expert intuitions, language audits, text-based analysis, and document or audiovisual materials analysis (Basturkmen, 2010; Creswell, 2007; Huhta et al., 2013; Long, 2005; Richards, 2001). Each of these data sources has their own strengths and weaknesses; thus, a triangulation of methods has been recommended in order to complement the limitations of each data source as well as to elaborate on different needs analysis methods (Creswell & Plano-Clark, 2011; Dörnyei, 2007; Huhta et al., 2013; Long, 2005). To triangulate the data, this study employed the mixed methods approach, combining quantitative and qualitative methods to identify the ESP needs for the undergraduate students. Based on time considerations, and the bottom up consideration of this study, interviews were

considered as the most appropriate qualitative tool for the present study, and the rationale for this selection is elaborated in Section 3.2.2.1, while the description of interview questions is discussed in Section 3.2.2.2.

### *3.2.2.1 Rationale for the choice of semi-structured interviews*

There are several types of interviews; they can be categorised into three main types: structured, in-depth and semi-structured interviews. The structured interview refers to an interview that asks closed questions, whereas in-depth interview refers an interview which is guided by general themes rather than pre-set questions (Travers, 2010). The structured interview is a common survey research instrument (Bryman, 2012), while in-depth and semi-structured interviews are extensively used as qualitative tools to explore social meaning (Travers, 2010). In this study, the semi-structured interview was the most appropriate type of interview due to its ability to obtain qualitative data based on a set of general questions in an efficient manner. The interview offered the opportunity of further triangulating the quantitative data and based on the sequential mixed methods design, to further explain the findings and trends in the quantitative phase.

A semi-structured interview refers to an interview in which the researcher prepares a set of guiding interview questions, but still has freedom to probe further for more information from the participants (L. Cohen et al., 2011; Mackey & Gass, 2005). The semi-structured interview is a popular instrument in qualitative design and is widely employed in the field of social science including linguistics (L. Cohen et al., 2011; Long, 2005). In addition, the semi-structured interview is the most favoured type of interview in educational research because it allows the researcher to ask follow up questions, clarification questions and achieve in-depth responses (Basit, 2010; Kvale & Brinkmann, 2008).

However, semi-structured interviews also have their drawbacks. The first main limitation is the lack of generalizability of findings from the data obtained. The findings may not be generalisable to the target population because information is sought from a small number of people (Travers, 2010). Another main challenge is high cost in time and money in its administration. According to Kumar (2014), the interview is time consuming and expensive when the research is scattered in different geographical locations. To reduce the administration challenge, the researcher employed face-to-face and telephone interviews (Kumar, 2014; Richards, 2001). The qualitative interviews aimed to elaborate and confirm the quantitative findings and provide depth in this research.

For face-to-face interviews, on the one hand, the researcher could take notes about the interview atmosphere including participant facial expressions and circumstances (Walter, 2010). Telephone interviews, on the other hand, offered the researcher and participants flexibility (L. Cohen et al., 2011). For example, the participants could be interviewed anywhere that had telephone coverage, making this practice inexpensive and fast (Gillham, 2008; Walter, 2010). Gillham (2008) argues that beside the lack of visual observation of the participants, a telephone interview offers the same quality as the face-to-face interview. Moreover, a telephone interview provides more opportunity for follow-up and additional sensitive answers, which the participants might not reveal in face-to-face interviews (Fraenkel et al., 2012). To capture perspectives from a range of stakeholders, and offer them choices and flexibility, face-to-face and telephone interviews with each individual stakeholder were utilised in this research.

#### *3.2.2.2 Description of the interview questions*

In a sequential explanatory mixed methods design, the interview questions were based mainly on the questionnaire items and the quantitative findings. The interview questions were

designed after the analysis of the quantitative data. The topics of interviews comprise the prioritised content areas and tasks for an ESP course, the importance of business communication, teaching methodology, the objectives of the Faculty ESP course, the course status, teaching syllabus and stakeholders' suggestions about assessment and measures assisting ESP course design.

There were two editions of interview questions; one was for the academic stakeholder groups and graduate employee group (see Appendices I and J) and another for the employer group (see Appendices K and L); both had English and Khmer versions. For interview questions in Appendices I and J, question 1 sought participants' opinions about the prioritised skills and tasks for the undergraduate students. Interview question 2 asked the participants about the importance of business communication for the ESP course as this topic was found the least preferred based on the quantitative results. Question 3 asked participants' opinions about the main objectives for the Faculty ESP course. To validate the quantitative findings regarding the ESP course syllabus, interview question 4 asked participants about teaching methods, activities and assessment types. Question 5 asks participants to elaborate the ESP course status. Question 6 asked participants to explain any anticipated challenges in designing an ESP course. The last four questions (7-10) sought participants' suggestions about measures to solve the challenges in ESP course design. These two questions were not asked to the industry stakeholders, as they may not have been familiar with the institutional constraints.

For the interview questions for the employer groups, as shown in appendices K and L, question 1, 2 and 3 asked participants about the tasks the graduate employees perform and abilities they lack in their workplace, as well as the importance of these tasks and skills for the ESP course. Like interview question 4 in the academic stakeholder groups and graduate employee group, questions 4 and 5 of the employer group asked participants' opinions about

the teaching methods, activities and assessment for the ESP course. Questions 6 and 8 of the employer group are exactly the same as the interview questions 2 and 5 of the academic groups and graduate employee group.

To ensure the clarity of the wording, the interview questions were pilot-tested with one lecturer of English, one undergraduate and one graduate employee. Similar to the process with the pilot questionnaires, the pilot interview results assisted in reformulating the questions for clarity. For example, many participants in the pilot interview stage suggested the researcher and participants use a mixture of English and Khmer and English language in the interview questions as well as answers, especially the language teaching terminology. For this reason, the researcher who was competent in both languages code-switched between the two languages when necessary.

### ***3.2.3 Research site***

The Royal University of Phnom Penh (RUPP) was chosen as the research site. The first rationale for choosing this university was that the RUPP English program review in 2013 recommended incorporating ESP into its existing English courses (Macalister, 2013). This recommendation had been incorporated into the university strategic plan 2014-2018. Second, RUPP shares many similar characteristics with other Cambodian universities with respect to the English curriculum policy for undergraduate students. As mentioned earlier in the introduction chapter, RUPP is a Category C university, which is the biggest university group planning to develop ESP courses. Second, RUPP is a current member of the ASEAN University Network (AUN), which makes this university a suitable case study site for investigation. Being an AUN member, RUPP acts as a role model for other universities in Cambodia. The last reason is that the researcher worked in this institution, thus it would



facilitate the data collection process. The findings from RUPP are expected to provide a model for ESP course design for other HEIs in Cambodia.

RUPP is the oldest public university in Cambodia and is a full member of the AUN. The university offers both undergraduate and graduate programs in the fields of science, humanities and social sciences, as well as foreign languages. Like other Cambodian HEIs, English language instruction is compulsory, with the exception of foreign language majors or disciplines other than English at the Institute of Foreign Languages (RUPP, 2015). That is, in these departments there is no English instruction in programs such as Bachelor of Arts in French and Bachelor of Arts in Chinese.

Each English course comprises four sessions a week, which consist of eighty minutes per session, approximately twenty weeks per semester. To identify students' English levels, placement tests are conducted for first year undergraduate students. Students who have completed an intermediate level of English can attend elective courses including English for general academic purposes courses such as Academic reading, Speaking skills, Essay writing and Introduction to research skills, and English for other purposes courses such as Methodology of English teaching, English for employment (resumés and application letters), TOEFL iBT Preparation and South East Asia Studies. However, there are no ESP courses that address English language for the undergraduate students' specific disciplines (Macalister, 2013). To assist the development of the ESP course in RUPP and other Cambodian HEIs, this study conducted a comprehensive needs analysis research into ESP course design.

To refine the scope of this thesis, this research selected the Faculty of Science (FoS) as a case study. To do so enabled an in-depth and holistic exploration of a case such as a small group of people or an organisation (Yin, 2014). The inclusion of other faculties would have made this study unmanageable.

The faculty comprises six disciplines, namely Departments of Biology, Chemistry, Computer Science, Environmental Science, Mathematics and Physics. The selection of this faculty was also consistent and in line with the RUPP English program management team's suggestions. They justified their decision based on the prioritised professions of ASEAN, which include science and engineering. The science program has also been the prioritised field in the government's policy in the Ministry of Education, Youth and Sport's Policy on Higher Education Vision 2030 for HEIs in Cambodia (MoEYS, 2014). The choice of the FoS was also motivated by the fact that science and engineering have become global disciplines (Orr, 2010). In particular, to help students to cope with their studies, as well as international conference attendance, publications and future careers, the English language curricula in RUPP have been reformed continuously in the last few years, making FoS the appropriate choice for this needs analysis research.

### ***3.2.4 Research participants***

#### ***3.2.4.1 Quantitative participants***

The target population of this study consisted of two main stakeholder groups - academic and industry. According to Creswell (2012), a target population (or a sampling frame) is a group of individuals with some common defining characteristics that the researcher can identify and study. In needs analysis studies, Long (2005) and Gollin-Kies et al. (2015) asserts that the data from different stakeholders should be triangulated. Many needs analysis studies have explored perspectives from different groups of stakeholders (e.g., Bosuwon & Woodrow, 2009; Cowling, 2006; Crosling & Ward, 2002). These studies revealed some mismatched perceptions, and more precise information from one particular group of stakeholders than the other. To triangulate the perceptions and obtain a comprehensive understanding of

stakeholder perceptions, this study sought perceptions and attitudes from both academic and industry stakeholder groups from the science disciplines and English lecturers.

Academic stakeholder groups comprise three stakeholder groups, namely undergraduate students, subject lecturers and English lecturers. Gollin-Kies et al. (2015) points out that needs analysis allows students to contribute their opinions on curriculum and forms an important aspect of the bottom up approach to curriculum design.

For undergraduate students, second and third year students in the FoS were selected.

However, year 1 and 4 undergraduates were not selected for this study. First, year 1 undergraduate students are considered to lack adequate background knowledge about what English language support they need for their major field of studies because they are beginner learners. According to Long (2005), unreliable data can be obtained by learners with little professional experience even when highly educated. Year 4 undergraduates were also not chosen for the study, because during the period of the current study data collection, they were on the three weeks of exam preparation break and exit examination.

The undergraduate students' career paths were varied and were based on their specialty and discipline of study. First, Biology students are expected to become professionals in medical and agricultural laboratories, plant breeding farms, beer brewing or food production plants or/and industries or teachers (RUPP, 2017a). Second, Chemistry students can choose to be researchers, technicians in chemical laboratories in the industrial sector, or become teachers of Chemistry (RUPP, 2017b). Third, graduates from the Computer Science department can work in IT-related fields such as client services, web development, network operations, program structuring, data structuring and object-oriented programming (RUPP, 2017c). Fourth, graduates from the Department of Environmental Science can work as scientists, activists and researchers at either governmental or non-governmental agencies (RUPP,

2017d). Fifth, graduates from the Department of Mathematics are expected to become statisticians, scientific managers, actuaries, system analysts, teachers and have science related careers (RUPP, 2017e). Finally, Physics graduates' career goals include researchers in either pure or applied Physics and teachers of Physics (RUPP, 2017f).

Second and third groups of academic stakeholders are subject lecturers and English lecturers in the FoS. All of them were selected. While subject lecturers may know what their students need in their specialisations, English lecturers know how to design language materials in ELT. Subject lecturers held the following qualifications: masters and PhD in Science from either local or international universities. English lecturers, consisting of both local and expatriates, had at least a Bachelor and a Masters qualification in TESOL and some of them had PhD from either Cambodian universities or universities overseas.

Industry stakeholder groups comprised graduate employees and employers specialising in the study fields of the FoS. Graduate employees, on the one hand, are former undergraduate students, who graduated from FoS and at the time of the research conducted, had been working in various workplaces relating to their specialisation (Crosling & Ward, 2002). Their workplaces included either public or private upper secondary schools and universities, national and international organisations, and companies. Employers held management roles and employed the graduate employees, as mentioned earlier in this paragraph. They were supervisors, managers or team leaders in the organisations. This thesis defined industry stakeholders, based on the careers identified on RUPP online database. All graduate employees needed to have been Faculty of Science graduates, and employers needed to specialise in one of the 6 science disciplines. In this thesis, teachers and principals were considered industry stakeholders. According to Robertson (2003) education is broadly

considered a service industry if it is a possible career pursuit for graduates of a faculty and this is how it was employed in this thesis.

To recruit participants for the quantitative phase, census and snowball sampling techniques were employed. According to Lodico, Spaulding, and Voegtle (2010), census sampling refers to a sampling technique of the whole population without drawing a random sample from the population. Census sampling is used when the realistic population is not too large. In other words, researchers use census sampling when they only obtain data from one context school. In this study, census sampling was used to recruit graduate students, subject lecturers and English lecturers, due to the case study nature of the study.

Snowball sampling refers to a technique used to identify potential participants for the research (Biernacki & Waldorf, 1981). Kumar (2014) maintains that researchers employ the snowball sampling technique when the potential participants are difficult to reach. This study employed snowball sampling to recruit industry stakeholders, as this was the most appropriate strategy and it encouraged identification of more stakeholders.

Regarding the number of participants that can be representative of the target population, this study aimed to select five hundred participants. Creswell (2012) suggests that educational researchers base the number of participants on the sample size tables of published books. He estimates the sample size of a survey study to be around 350 participants, which reaches a 95 per cent confidence level of 5000 population, according to the sample size table of (L. Cohen et al., 2011). Similarly, Lodico et al. (2010) suggest a sample size of between 350 and 500 to be adequate when the population is as large as 5000 or more. Although there is some variation in terms of the appropriate sample size between several researchers, many of them seem to agree on the principle that the larger the sample size, the less potential for errors. However, the sample size needs to be within the resources and available time of the researchers.

This research aimed to obtain a sample size of 500 by recruiting 330 undergraduates, 70 subject specific lecturers, 17 lecturers of English, 50 graduate employees and 33 employers. However, the overall response rate of the present study was 68.2 per cent (341 out of 500) (see Table 2). According to Kumar (2014), the response rate of the questionnaires can be as low as 20 per cent, and obtaining a 50 per cent response rate is considered fortunate. Moreover, this number meets the suggestion of the author mentioned above (L. Cohen et al., 2011; Creswell, 2014; Lodico et al., 2010).

Table 2 Demographics of participants in the quantitative phase

	Academic stakeholders			Industry stakeholders		Total
	Undergraduate	Subject	English	Graduate	Employers	
Discipline	Students	Lecturers	Lecturers	Employees		
Bio	40	4		6	1	51
Che	43	9		2	1	55
Com	29	15		2	3	49
Env	44	3		5	4	56
Mat	60	7		2	1	70
Phy	36	5		2	1	44
Eng			16			16
Total	252	43	16	19	11	341

*Note:* Bio: Biology; Che: Chemistry; Com: Computer Science; Env: Environmental Science; Mat: Mathematics; Phy: Physics; Eng: English

To increase the response rate of the participants, Dornyei (2003) suggests that the researcher pay close attention to every step of the data collection process. That is, a quality questionnaire

administration procedure could improve the number of responses. To obtain a quality questionnaire administration, the researcher adapted some suggestions by Dornyei (2003), adjusted to the Cambodian context.

Before the data collection began, the researcher had an informal communication with the Dean of FoS, the head of English Language Support Unit, and participants through face-to-face, telephone, email, or Facebook about an overview of the study. Advanced notice of the research allowed the potential participants to realise the significance of their contribution to the research findings, and helped increase the response rate. Moreover, the researcher also obtained a letter of approval from the rector of RUPP, as well as notes from the heads of FoS and ELSU asking the lecturers to help complete the questionnaires. Additionally, to remind the research participants to complete and return the questionnaires, follow up correspondence with each participant was also implemented through email, text and Facebook messages and a number of personal reminders. These steps abided by the ethical considerations of this study.

#### *3.2.4.2 Participants in qualitative phase*

To select the participants in the qualitative phase, this study adopted the suggestions of Seidman (2006). In interview studies, Seidman (2006) argues that a large number of participants are a statistical concept, which is prohibitive in an in-depth exploration. However, in order to ensure that there were enough participants to obtain sufficiency and saturation of information, thirty interview participants were recruited (Seidman, 2006; Teddlie & Yu, 2007). Seidman (2006) warns researchers to select the participants based on the practicality principle, which includes time, money, and other resources. This study adopted the criteria of sufficiency and saturation information principles to recruit the participants for the qualitative phase.

To ensure sufficiency and saturation of information, a purposive sampling technique was employed to select thirty participants from the quantitative phase, who volunteered to participate in the qualitative phase (see Table 3). A purposive sampling refers to a non-

Table 3 Demographics of participants in the qualitative phase

Discipline	Academic stakeholders			Industry stakeholders		Total
	Undergraduate	Subject	English	Graduate	Employers	
	Students	Lecturers	Lecturers	Employees		
Bio	1	1		1	1	4
Che	1	1		1	1	4
Com	1	1		1	1	4
Env	1	1		1	1	4
Mat	1	1		1	1	4
Phy	1	1		1	1	4
Eng			6			6
Total	6	6	6	6	6	30

*Note:* Bio: Biology; Che: Chemistry; Com: Computer Science; Env: Environmental Science; Mat: Mathematics; Phy: Physics; Eng: English

probability sampling technique, in which participants are selected based on various criteria including the participants' knowledge of the research issue, and willingness to participate in the research (Basit, 2010; P. Oliver, 2006). In addition, to obtain representativeness of perceptions, at least one representative from each group of stakeholders was selected. The selection of six English lecturers enabled in-depth perspectives of the main implementation agents of the ESP course. English lecturers would be involved in the ESP course design and



teaching of the course, and they were well aware of the resources of the existing English program and are knowledgeable about current trends in language teaching more than other stakeholders. According to Brindley and Hood (1990), in a decentralised model of the adult ESL curriculum innovation, involving teachers in the course design process fosters the exchange of views in defining and negotiating the students' learning goals.

### ***3.2.5 Reliability, validity and practicality***

Reliability, validity and practicality were taken into serious consideration in this study. I. S. P. Nation and Macalister (2010) suggest that all researchers consider the reliability, validity and practicality of the procedure of needs analysis. To obtain reliable results, systematic standardised tools including observation checklists and questionnaires need to be carefully developed (I. S. P. Nation & Macalister, 2010). To obtain reliable findings, this study adopted the explanatory sequential mixed methods design by combining questionnaires and semi-structured interviews, which were systematically developed and reviewed.

To ensure the validity of the study, the researcher took a number of measures. A valid needs analysis gathers relevant and necessary information, which provides enough results for a course development decision (I. S. P. Nation & Macalister, 2010). First, the mixed methods approach that was employed in this study aligned with the research design employed in previous studies into needs analysis and ESP course design, which was one form of improving the validity of this study's research design. Both instruments were piloted with stakeholders to ensure clarity and appropriateness of questionnaire items and interview questions, and which improved the validity of findings. In addition, to achieve valid results, this study employed reliable data analysis techniques and sought perceptions from relevant stakeholders in both the quantitative and qualitative phases.

Another issue that the researcher took into account was practicality. A practical needs analysis involves an inexpensive procedure that does not consume too much of the learners' and teachers' time (I. S. P. Nation & Macalister, 2010). To ensure that research participants' time was used wisely, the instruments were carefully pilot-tested and revised prior to data collection. To complete the questionnaire, each participant needed about twenty minutes, whereas the semi-structured interview lasted around thirty minutes. Finally, face-to-face interviews and telephone interviews were employed to allow flexibility.

### *3.2.6 Ethical considerations*

In addition to reliability, validity and practicality considerations, it was necessary to comply with the principles of research ethics. According to Habibis (2010), ethical research involving humans is governed by ethical principles and values. In quantitative, qualitative or mixed methods designs, Kumar (2014) points out that various stakeholders in the research need to be appropriately considered and well informed about the purposes of any research projects. These stakeholders include participants, the researcher and the funding body. First, the research participants should be informed about the overview of the study, which was also stated in the participant information sheet and be offered an informed consent by filling in and sign the consent form prior to their participation in any research (see Appendices A, B, C and D). Also, the participants should be allowed to withdraw from the research at any time without any harm or feeling of discomfort. In addition, any risks relating to their physical and psychological welfare need to be avoided. Their identities also need to be kept confidential through employing coding techniques or pseudonyms. Second, like the research participants, the foreseen risks for the researcher must be avoided or minimised through certain measures. Additionally, the researchers need to be neutral by not being biased or inaccurate. Finally,

with regard to the sponsoring organisation, imposing restrictions or misuse of information should be avoided when it comes to reporting the research findings.

In Australia, any research projects including theses that deal with humans must be approved by the human research ethics committee (HREC) of that institution. Prior to collecting data, this research was approved by the University of Canberra (UC) HREC (see Appendix N). In addition, each participant in the study was informed about the research project through the participant information sheet (see Appendices A and B). The participant information sheet offered a description of the research, the participant role, confidentiality, anonymity and data storage. Prior to completing the questionnaires and interviews, each participant was briefed about the research project and their role as a research participant.

To ensure the anonymity and confidentiality of the participants, this study employed systematic data management and storing techniques. How data are recorded and stored affects the participants' anonymity and confidentiality (Habibis, 2010). According to Habibis (2010), anonymity involves the protection of the identities of the research participants, whereas confidentiality is based on the principle that the participants' contribution cannot be identified. The research abided by these principles to ensure an ethical process.

### **3.3 Data collection**

This section describes the data collection procedures for both the quantitative and qualitative phases. The quantitative data collection (3.3.1) involved administration of the questionnaires, and the qualitative data collection (3.3.2) employed individual semi-structured interviews.

### *3.3.1 Quantitative data collection*

In the first phase, the researcher delivered the questionnaires to all stakeholder groups. For undergraduates and lecturers of English, the researcher obtained the ID lists from the English language program office. Then the researcher delivered the questionnaires to them at the beginning of their English classes. Before delivering the questionnaires, students and lecturers were informed about the research project orally and information sheets were distributed to them. The participants were also informed that they could choose not to answer any questions or withdraw from the research at any time. To allow the participants to ask about the research project, the researcher and his supervisors' contact details were also included on the information sheet. To save the participants learning and teaching time, they were asked to complete and return the questionnaire to the researcher later. For the undergraduate students, they were asked to return the questionnaire to their English lecturers. Then the English lecturers gave their own and their students' questionnaires to the researcher in English Language Support Unit's office room, where the lecturers worked.

For subject lecturers, the researcher obtained permission and their contact lists from the Dean. The researcher delivered the questionnaires to them and collected them from, each discipline office. This procedure allowed flexibility and time for lecturers to express their views.

The data collection with the industry stakeholder groups was done online. For graduate employee groups, the researcher obtained their contact lists from the Quality Assurance Office. The researcher called and invited all of them to participate in the research. To ensure that their details were accurate, they were asked to verify and update their information. The questionnaires were emailed to them. According to Kumar (2014), online questionnaire administration is commonly used in the era of information technology. For the employer group, the researcher obtained their contact details from the graduate employees. The data

collection method for this group was the same as the employee group, as both graduate employees and employers of each specialisation were working in the same workplace.

The timeframe to complete and return the questionnaires to the researcher was two weeks for all stakeholder groups. Regarding the mean of returning the questionnaire and consent form, all academic stakeholder groups returned them in person, whereas all the industry stakeholders returned them via email and other electronic means, including google drive link and Facebook messaging.

### ***3.3.2 Qualitative data collection***

Thirty participants from the quantitative phase, who agreed to participate in the second phase, were invited for individual semi-structured interviews. Two forms of individual interview were employed including face-to-face and telephone interviews. English lecturers, subject lecturer and undergraduate students were interviewed face-to-face, whereas graduate employees and employers were telephone interviewed.

Before each interview began, every participant, once again, was given an overview of the study and ethical issues mentioned on the participant information sheet and consent form attached with each questionnaire. This is a recommended process called *briefing* where the researcher explains the purpose of the study, asks the participant if they have any questions before the interview (Kvale & Brinkmann, 2008). The interviews were conducted in English with lecturers of English due to their preference to speak English, whereas the other stakeholders were interviewed in the Khmer language to avoid miscommunication due to the low English proficiency level of some of the participants. Although all participants agreed to have the interviews recorded, they were informed before the recording to relax and respond to

each interview question sincerely for validity and reliability of the research results, and that their identity would not be revealed in the thesis and any other forms of report.

The quality of the interview recording was also considered. Face-to-face individual interviews took place in a booked room at RUPP, whereas individual telephone interviews occurred in the researcher's study room with a *Do not disturb* sign placed on the doors. In addition, a computer-assisted recording application, QuickTime Player was used to record and maintain the high quality of the interview sound for both face-to-face and telephone interviews, and a quality speaker for the telephone interview. It is common that telephone interview is assisted by the computer because the researcher can read the questions, write notes, and record the interviews during the interviewing (L. Cohen et al., 2011). According to Travers (2010), recorded interviews ensure the safety of the data. Each recorded interview lasted around thirty minutes.

### **3.4 Data management**

#### ***3.4.1 Quantitative data management***

To ensure the confidentiality and anonymity of the participants, the quantitative raw data were processed and cleaned. To ensure the raw data are free from inconsistencies and incompleteness, they need to be edited (Kumar, 2014). In editing the raw data, the researcher screened each questionnaire by screening for the signed consent form and its completeness. When any signed consent forms were missing and the first section of the questionnaire remained blank, those questionnaires were discarded.

Coding was the next step of data processing (Kumar, 2014). Coding the questionnaires also helped the researcher clean the data (Dornyei, 2003). In coding the questionnaires, the researcher sorted and coded all the questionnaires based on a coding system. The codes

started with a capital letter, followed by three-digit numbers. For example, an undergraduate's questionnaire was coded U001. After coding the questionnaires, the researcher separated the consent forms from the questionnaires so that the participants' identity was removed before inputting the data into the SPSS. Separating identifying information such as contact details from the raw data ensures the confidentiality and anonymity of the participants (Habibis, 2010). The researcher cleaned the raw data again by inputting the data into the SPSS, and ran frequency output in order that any odd numbers would appear, which were then rechecked. The researcher saved time by only double checking specific questionnaires and verified the answers to specific data entry columns. Screening and cleaning the data helped improve the reliability of the research findings (Dornyei, 2003).

#### *3.4.2 Qualitative data management*

The confidentiality of the participants in the qualitative phase was also maintained. To hide the participants' identity, Seidman (2006) suggests establishing a coding system in place prior to the interviews. The coding system for this study consists of letters, followed by numbers. Table 4 displays the coding of the thirty interview participants that was used in this thesis.

Additionally, all the interviews were transcribed and translated by the researcher. First, all the recordings were transcribed verbatim. Then the Khmer transcripts were translated into English by the researcher. Then transcripts were checked and edited by the researcher's supervisors to eliminate any grammatical or vocabulary inconsistencies.

Table 4 Interview participant codes (A)

	Academic stakeholders			Industry stakeholders	
	Undergraduate Students'	Subject Lecturers'	English Lecturers'	Graduate Employees'	Employers' Code
Discipline	Code	Code	Code	Code	
Bio	UBi	LBi		GBi	EBi
Che	UCh	LCh		GCh	ECh
Com	UCo	LCo		GCo	ECo
Env	UEn	LEn		GEN	EEn
Mat	UMa	LMa		GMa	EMa
Phy	UPh	LPh		GPh	EPh
Eng			EnL1-EnL6		

*Note:* Bio: Biology; Che: Chemistry; Com: Computer Science; Env: Environmental Science; Mat: Mathematics; Phy: Physics; Eng: English Lecturers

### 3.4.3 Data storage

The anonymity and confidentiality of the research participants also involves storing the data. In Australia, based on the National Statement on Ethical Conduct of the National Health and Medical Research Council, in any research involving humans, the following actions must be taken.

- remove identifying material from records at the earliest possible time
- only collect personal information where it is absolutely necessary for the research
- use coding procedures
- store separately any data containing personal information



- [avoid] stor[ing] personal information on their hard disk
- dispose of the personal information as soon as possible; for example, destroy contact information once data collection is complete (Habibis, 2010, pp. 103-104).

To maintain the confidentiality of the interview participants, Seidman (2006) suggests that the researchers keep the participants' identity records including contact information sheets, informed consent forms, and audiotapes in a secure place. For this research, the raw data of both quantitative and qualitative phases were stored in a locked cabinet, a password protected computer and a backup external hard drive. In addition, based on the UCHREC, the data will be destroyed five years after the research project is completed. Only the researcher and his supervisors could access, process and analyse the data.

### **3.5 Data analysis**

Based on the nature of the explanatory sequential mixed methods design, quantitative data were analysed first, before the analysis of the qualitative interview data.

#### ***3.5.1 Quantitative data analysis***

To help analyse the quantitative data, SPSS was employed. According to Patman (2010), in an academic setting, the most commonly used software in analysing quantitative data might be SPSS because of its main ability to analyse large data sets. To analyse the quantitative data, this research used SPSS for calculating descriptive and inferential statistics. Descriptive and inferential statistics calculate frequencies, means, standard deviation, significant values and correlation scores (Morgan, Leech, Gloeckner, & Barrett, 2004).

To analyse the questionnaire items in section B, mean score, standard deviation, and Kruskal-Wallis ANOVA were computed. To analyse the questionnaire items in section C1, cross-

tabulation was used to compare frequencies between each of the stakeholder groups. To analyse questionnaire items in section C2 inferential statistics, namely Spearman's Rho correlation, was calculated to identify the order of importance of the ESP course eight content areas. The results of statistical analysis are presented in tables, charts and graphs (see Chapter 4: Quantitative findings). Tables and other coloured visual aids help clarify what the researcher meant and summarise the key points, which make the presentation of the findings easy to understand and reader friendly (Fraenkel et al., 2012).

### *3.5.2 Qualitative data analysis*

To analyse the interview data, thematic analysis techniques were used in this study. According to Boyatzis (1998), thematic analysis is a process for encoding qualitative data and interpreting them into themes. The presence of themes in the data could be both predetermined and emerged (Willis, 2010). Theme generation involves an explanation and interpretation of an investigated issue (Green et al., 2007).

The thematic analysis could be helped with a computer-assisted software called NVivo (Kumar, 2014; Willis, 2010). To help the researcher manage and organise the qualitative interview data and coding, NVivo for Mac was used. However, Willis (2010) warns that the software does not analyse and transcribe the data, which is the role of the researcher. In identifying the main themes that emerged from the data, Kumar (2014, p. 318) suggests four steps: "identifying the main themes," "assign codes to the main themes," "classifying responses under the main themes," and "integrate themes and responses into the text of the report." These steps were followed in this research as they provided a systematic approach.

To identify the predetermined and emerged themes, the coding of the interview data involved deductive (or a priori) and inductive coding techniques, which the researcher employed in this

study. Deductive coding refers to the codes developed by the researcher through the review of the literature, whereas inductive coding is a coding process in identifying themes that emerge from the data (Boyatzis, 1998; Willis, 2010). To code the data, the researcher read the thirty transcripts line by line and coded the themes using the NVivo application. To avoid the misinterpretation of the participants' intention, their speech was quoted in this thesis, and was carefully edited by the two academic supervisors of the researcher. That is, the themes were checked, rechecked and discussed for validity purposes. The results were presented in themes and based on interview questions and supported by quotations from the participants.

### **3.6 Summary**

This chapter offered a detailed description and justification of the research methodology of this study. The sequential mixed methods design was employed in this study because it was found that its strengths outweigh the weaknesses and it can better answer the research questions, than either quantitative or qualitative methods alone. This approach is consistent with recent trends in ESP research. Questionnaires were chosen as the research instrument for the quantitative phase and semi-structure interviews were adopted with thirty participants selected from the quantitative phase. The strengths of the instruments complement each other in dealing with the weaknesses. To recruit the participants in both phases, purposive, census and snowball sampling techniques were used.

In this research, a case study was considered appropriate because it provided in-depth and a holistic picture of the needs analysis for the ESP course. By considering the constraints of one institution, the case study could provide insights into ESP course design in other Cambodian HEIs. The case study included stakeholders from one HEI in Cambodia and specifically the Faculty of Science. The Science faculty was chosen, as it has been a prioritised field by the Cambodian government and in ESP field. In addition, to ensure the research complied with all

the ethical principles required by the University of Canberra, the ethical approach to research was explained. The chapter concluded with a description of the data management in both phases.

The next chapter, Chapter 4, presents the findings of the quantitative phase of this research.

## CHAPTER 4

### QUANTITATIVE FINDINGS

This chapter is divided into five sections, based on the sections used in the questionnaire.

Section 4.1 shows the participants' demographic information, including the number of participants in each stakeholder group. Section 4.2 shows the results of questionnaire section B, which sought participants' perceptions about the necessity for the existing English subject and the prospective ESP course. Section 4.3 presents the findings of the questionnaire section C, which identified language skills and competencies for students' academic and occupational purposes. Section 4.4 reports the results of the questionnaire section D, which identified ESP course-related issues, including preferred course domains, syllabi, challenges and measures in assisting the ESP course development. The final section (4.5) summarises the chapter by highlighting the main findings of the quantitative phase.

#### **4.1 Participants in the quantitative phase**

Information about the participants has already been presented in the Methodology chapter (Chapter 3), but it is worth mentioning again in this chapter because the findings are better comprehended and more meaningful when there is a clear picture of who the participants were. There were 341 participants from the different stakeholder groups participating in the quantitative phase (see Figure 6). The stakeholder groups were divided into two main categories: academic and industry stakeholders. The academic stakeholder group, on the one hand, consisted of 252 undergraduate students, 43 subject lecturers, and 16 English lecturers. The industry stakeholders, on the other hand, were 19 graduate employees and 11 employers.

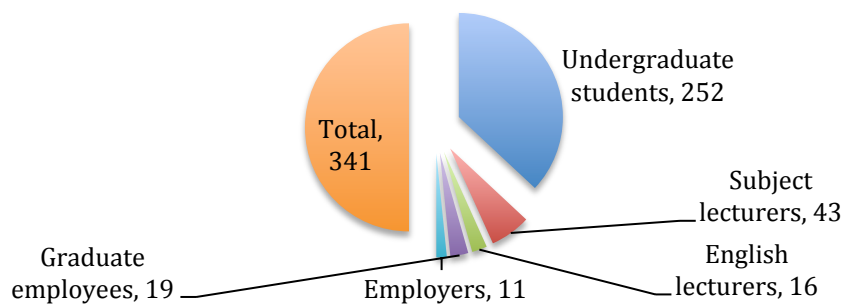


Figure 6 Participants in the quantitative phase sorted by stakeholder

The 341 participants from the two main stakeholder groups came from seven disciplines or departments: Biology, Chemistry, Computer Science, Environmental Science, Mathematics, Physics, and English (see Figure 7). The six department or discipline participants were from the Faculty of Science (FoS), comprising 51 participants from Biology, 55 from Chemistry, 49 from Computer Science, 56 from Environmental Science, 70 from Mathematics, and 44 from Physics. The stakeholder groups were made up of 40, 43, 29, 44, 60, 36 undergraduates, 4, 9, 15, 3, 7, 5 subject lecturers, 6, 2, 2, 5, 2, 2 graduate employees, and 1, 1, 3, 4, 1, and 1 employer respectively. The last stakeholder group consisted of 16 English lecturers.

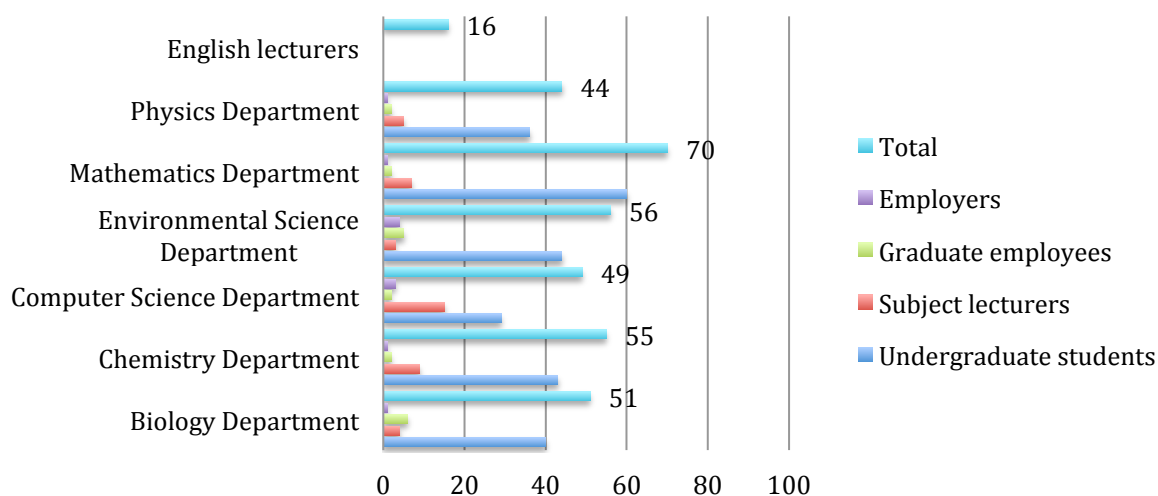


Figure 7 Participants in the quantitative phase sorted by department or discipline

## 4.2 Participants' general perceptions about English and ESP

This section shows participants' perceptions about the importance of the existing English subject, the importance of building skills in English for occupational purposes, the importance of developing skills in English for academic purposes and the necessity for future ESP course development for undergraduate students of FoS. The results are reported through the mean scores and standard deviations, derived from the results of the five-point Likert scale [1 (totally disagree) to 5 (totally agree)], which were converted from the questionnaire section B (see questionnaire in Appendix E). There is also a comparison of the mean scores among the seven discipline stakeholder groups. In this chapter, the term "undergraduates" is used interchangeably with "undergraduate students", and refers to the undergraduate students of FoS; the term "departmental or department" refers to discipline or specialisation at RUPP.

### 4.2.1 The importance of English as a subject

Questionnaire item B1 asked participants for their opinions on the importance of the English language subject for undergraduate students (see Appendix E).

Figure 8 shows the perceptions of the seven discipline groups of the importance of the English language subject. The overall mean score is 4.7918 and standard deviation  $SD = 0.46721$ . In addition, the mean score of each stakeholder group has a similar value ranging from 4.7273 to 4.9107 and the standard deviation ranges from 0.28774 to 0.69428.

The high mean score indicates that the majority of the stakeholder groups had very positive attitudes about the importance of the English subject for undergraduate students. Among the seven groups, the Environmental Science stakeholders showed the highest positive attitude, which is evident through the mean score  $M = 4.9107$  and standard deviation  $SD = 0.28774$ ; they were followed by the stakeholder groups of lecturers of English ( $M = 4.875$ ;  $SD =$

0.34157), Chemistry ( $M = 4.8364$ ;  $SD = 0.37335$ ), Computer Science ( $M = 4.7755$ ;  $SD = 0.42157$ ), Biology ( $M = 4.7451$ ,  $SD = 0.56011$ ), Mathematics ( $M = 4.7286$ ,  $SD = 0.44791$ ), and Physics ( $M = 4.7273$ ,  $SD = 0.69428$ ).

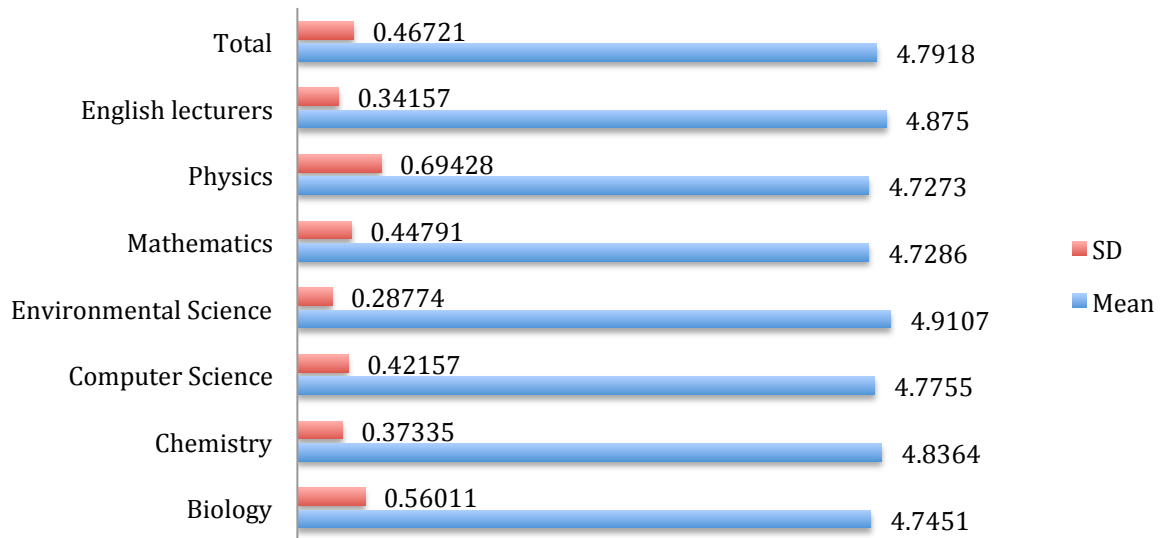


Figure 8 The importance of English as a subject

However, a Kruskal Wallis ANOVA indicated that there were no statistically significant differences among the mean scores across the seven stakeholder groups of Biology (*Mean Rank* = 166.80), Chemistry (*Mean Rank* = 176.26), Computer Science (*Mean Rank* = 165.95), Environmental Science (*Mean Rank* = 188.87), Mathematics (*Mean Rank* = 157.99), Physics (*Mean Rank* = 168.57), and English lecturers (*Mean Rank* = 182.81),  $H$  (corrected for ties) = 7.874,  $df = 6$ ,  $N = 341$ ,  $p = 0.247$  (see Table 5).



Table 5 Kruskal-Wallis Test for the importance of English as a subject

Ranks

Department	N	Mean Rank
Biology	51	166.80
Chemistry	55	176.26
Computer Science	49	165.95
Environmental Science	56	188.87
Mathematics	70	157.99
Physics	44	168.57
English lecturers	16	182.81
Total	341	

Test statistics<sup>a,b</sup>

Importance of English subject	
Chi-Square	7.874
df	6
Asymp. Sig.	.247

a. Kruskal Wallis Test

b. Grouping variable: department

#### 4.2.2 The importance of developing skills in English for occupational purposes

Questionnaire item B2 surveyed participants about the importance of developing skills in English for occupational purposes for undergraduate students (see Appendix E).

Figure 9 shows the perceptions of the seven stakeholder groups towards the importance of developing skills in English for occupational purposes for undergraduate students' future jobs. The overall mean score is 4.6862 and  $SD = 0.50708$ ; the mean score of each stakeholder group is high and similar, ranging from 4.5909 to 4.7818; and the standard deviation ranges from 0.45644 to 0.62201.

The high mean score indicates that the majority of participants had very positive attitudes towards the importance of developing English skills for the undergraduate students' future

jobs. Among the seven stakeholder groups, the Chemistry stakeholders had the highest positive attitude towards the importance of building English skills for undergraduate students' future jobs, which was shown by the mean score  $M = 4.7818$  and  $SD = 0.4591$ . This group was followed by other stakeholder groups: Computer and Environmental Sciences ( $M = 4.7143$ ;  $SD = 0.45644$ ; and  $M = 4.7143$ ;  $SD = 0.56292$ ), Biology ( $M = 4.7059$ ;  $SD = 0.46018$ ), English lecturers ( $M = 4.6875$ ;  $SD = 0.47871$ ), Mathematics ( $M = 4.6143$ ;  $SD = 0.49028$ ), and Physics ( $M = 4.5909$ ;  $SD = 0.62201$ ).

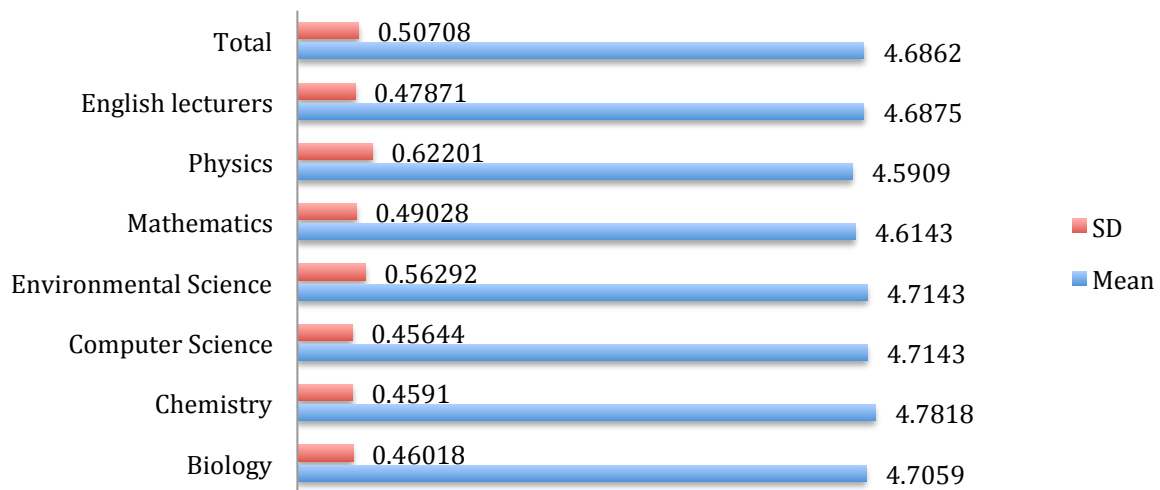


Figure 9 The importance of developing skills in English for occupational purposes purposes

However, a Kruskal-Wallis ANOVA indicated that there were no statistically significant differences among the mean scores across the stakeholder groups: Biology (*Mean Rank* = 172.29), Chemistry (*Mean Rank* = 187.29), Computer Science (*Mean Rank* = 173.71), Environmental Science (*Mean Rank* = 178.83), Mathematics (*Mean Rank* = 156.81), Physics (*Mean Rank* = 159.38), and English lecturers (*Mean Rank* = 169.19),  $H$  (corrected for ties) = 6.286,  $df = 6$ ,  $N = 341$ ,  $p = 0.392$  (see Table 6).

Table 6 Kruskal-Wallis Test for the importance of developing skills in English for occupational purposes

Ranks

Department	N	Mean Rank
Biology	51	172.29
Chemistry	55	187.29
Computer Science	49	173.71
Environmental Science	56	178.83
Mathematics	70	156.81
Physics	44	159.38
English lecturers	16	169.19
Total	341	

Test statistics<sup>a,b</sup>

Importance of developing skills in English for occupational purposes	
Chi-Square	6.286
df	6
Asymp. Sig.	.392

a. Kruskal Wallis Test

b. Grouping variable: department

#### 4.2.3 The importance of developing skills in English for academic purposes

Questionnaire item B3 surveyed participants about the importance of building academic English skills for undergraduate students (see Appendix E).

Figure 10 shows the perceptions of the seven stakeholder groups towards the importance of developing skills in English for academic purposes. The overall mean score is 4.5894 and  $SD = 0.56496$ ; the mean score of each stakeholder group is high and similar, ranging from 4.4571 to 4.7500 and the standard deviation ranges from 0.49031 to 0.61237.

The high mean score indicates that the majority of stakeholder groups agreed that building English skills for the undergraduate students' academic studies was important. Among the

seven stakeholder groups, the English lecturers had the highest positive attitude towards the importance of developing English skills for undergraduate students' academic studies; this is shown by the mean scores  $M = 4.75$  and standard deviation  $SD = 0.57737$ . English lecturer group is followed by other stakeholder groups: Biology ( $M = 4.6863$ ;  $SD = 0.58276$ ), Environmental Science ( $M = 4.6607$ ;  $SD = .58081$ ), Chemistry ( $M = 4.6182$ ;  $SD = 0.49031$ ), Physics ( $M = 4.5227$ ;  $SD = 0.50526$ ), Computer Science ( $M = 4.5714$ ;  $SD = 0.61237$ ), and Mathematics ( $M = 4.4571$ ;  $SD = 0.58199$ ).

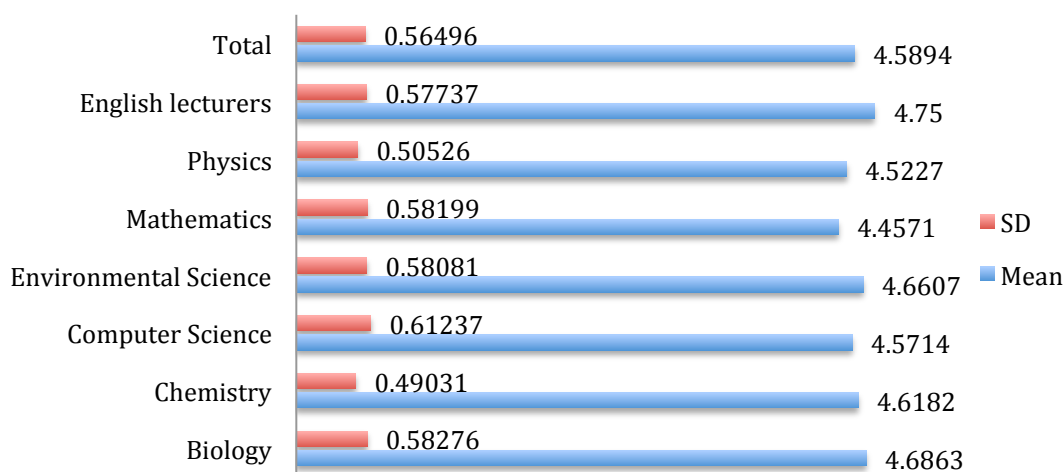


Figure 10 The importance of developing skills in English for academic purposes

However, a Kruskal-Wallis ANOVA indicated that there were no statistically significant differences among the mean scores of department stakeholders of Biology (*Mean Rank* = 189.09), Chemistry (*Mean Rank* = 172.35), Computer (*Mean Rank* = 170.01), Environmental Science (*Mean Rank* = 184.32), Mathematics (*Mean Rank* = 149.16), Physics (*Mean Rank* = 156.32), and English lecturers (*Mean Rank* = 201.03),  $H$  (corrected for ties) = 12.084,  $df = 6$ ,  $N = 341$ ,  $p = .060$  (see Table 7). need not be given a high priority in an ESP course

Table 7 Kruskal-Wallis Test for the importance of developing skills in English for academic purposes

Ranks

Department	N	Mean Rank
Biology	51	189.09
Chemistry	55	172.35
Computer Science	49	170.01
Environmental Science	56	184.32
Mathematics	70	149.16
Physics	44	156.32
English lecturers	16	201.03
Total	341	

Test statistics<sup>a,b</sup>

Importance of developing skills in English for academic purposes	
Chi-Square	12.084
df	6
Asymp. Sig.	.060

a. Kruskal Wallis Test

b. Grouping variable: department

#### 4.2.4 The necessity for prospective ESP course development

Questionnaire item B5 surveyed participants about the potential for ESP course development for undergraduate students (see Appendix E).

Figure 11 shows the perceptions of the seven stakeholder groups about the necessity for the establishment of an ESP course. The overall mean score is 4.5103 with  $SD = 0.65353$ , and the mean score of each stakeholder group is high and similar, ranging from 4.375 to 4.6471 and the standard deviation ranges from 0.48264 to 0.82091.

The high mean score indicates that the majority of stakeholder groups showed strong agreement about the necessity for ESP course development for the FoS undergraduate

students. Among the seven stakeholder groups, the Biology stakeholders had the highest positive attitude towards the necessity for ESP course development for undergraduate students, which is shown by a mean score  $M = 4.6471$  and standard deviation  $SD = .48264$ . This group was followed by Chemistry ( $M = 4.6182$ ;  $SD = 0.52673$ ), Environmental Science ( $M = 4.4821$ ;  $SD = 0.71328$ ), Physics ( $M = 4.4773$ ;  $SD = 0.82091$ ), Mathematics ( $M = 4.4571$ ;  $SD = 0.65244$ ), Computer Science ( $M = 4.4286$ ;  $SD = .73598$ ), and the English lecturer stakeholders ( $M = 4.375$ ;  $SD = 0.50000$ ).

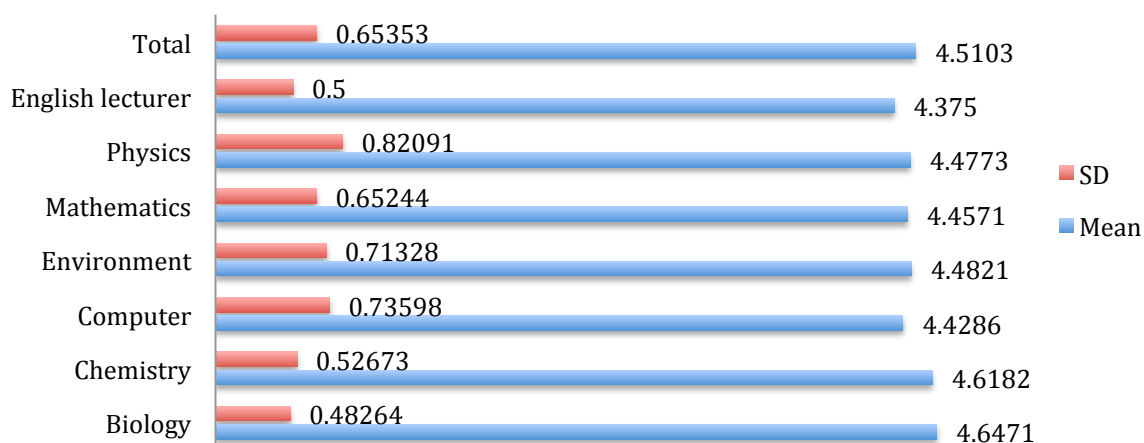


Figure 11 The necessity for prospective ESP course development

However, a Kruskal-Wallis ANOVA indicated that there were no statistically significant differences between the mean scores of the Biology stakeholders (*Mean Rank* = 186.26), Chemistry (*Mean Rank* = 283.24), Computer (*Mean Rank* = 162.59), Environmental Science (*Mean Rank* = 169.88), Mathematics (*Mean Rank* = 162.23), Physics (*Mean Rank* = 173.52), and English lecturers (*Mean Rank* = 141.38),  $H$  (corrected for ties) = 5.930,  $df = 6$ ,  $N = 341$ ,  $p = .431$  (see Table 8).

Table 8 Kruskal-Wallis Test regarding the necessity for prospective ESP course development

Ranks

Department	N	Mean Rank
Biology	51	186.26
Chemistry	55	283.24
Computer Science	49	162.59
Environmental Science	56	169.88
Mathematics	70	162.23
Physics	44	173.52
English lecturers	16	141.38
Total	341	

Test statistics<sup>a,b</sup>

Necessity for future ESP course development	
Chi-Square	5.930
df	6
Asymp. Sig.	.431

a. Kruskal Wallis Test

b. Grouping variable: department

### 4.3 Participants' perceptions about undergraduate students' needs

Section C1 in the questionnaire surveyed 341 participants about their opinions regarding the content areas of the ESP course, and Section C2 explored the correlation among the content areas (see Appendix E). In other words, this section shows the participants' preferences with regard to the eight skills or topics included in the ESP course for undergraduate students, and the correlation among the eight components. The eight topics include speaking, listening, reading, writing, vocabulary, grammar, cross-cultural awareness, and business communication. For questionnaire items from C1.1 to C1.8, participants could mark more than one option.

The presentation of the findings of each topic comprised the overall participant perceptions by the seven departmental stakeholder groups, namely the English lecturer stakeholder group and the six departmental FoS stakeholder groups of Biology, Chemistry, Computer Science, Environmental Science, Mathematics, and Physics. These preferences provide guidance for developing a suitable curriculum for an ESP course at RUPP. In addition, other universities developing ESP programs may find the results useful, as the results pertain more widely to the context of Cambodia.

#### *4.3.1 Speaking skills*

Questionnaire item C1.1 explored participant opinions about which speaking skills and tasks should be included in the content of an ESP course (see Appendix E). The speaking skills included presentation, group discussion, debate, pronunciation skills and an *other* option.

Figure 12 shows the overall perceptions of the seven stakeholder groups in regard to speaking skills. Among the speaking skills, presentation was the most popular option selected by the majority of the seven stakeholder groups (74.9%) and was considered to be the most important skill to be included in the ESP course. In particular, 87.5% of English lecturers who completed the questionnaire prioritised presentation skills. In excess of 81.3% of English lecturers also selected debate and group discussion as key skills to be incorporated within an ESP course. Debate was similarly chosen by many Environmental Science stakeholders, who accounted for 80.4% of the positive responses. Overall, however, pronunciation was considered the least important skill being selected by only 37% of participants. That other speaking skills should also be incorporated into the ESP course was the perception of 4.3% of stakeholders; the other skills included communication, conversation and speaking contest skills. In sum, these results indicate that presentation and debate should be prioritised speaking skills in the ESP course.



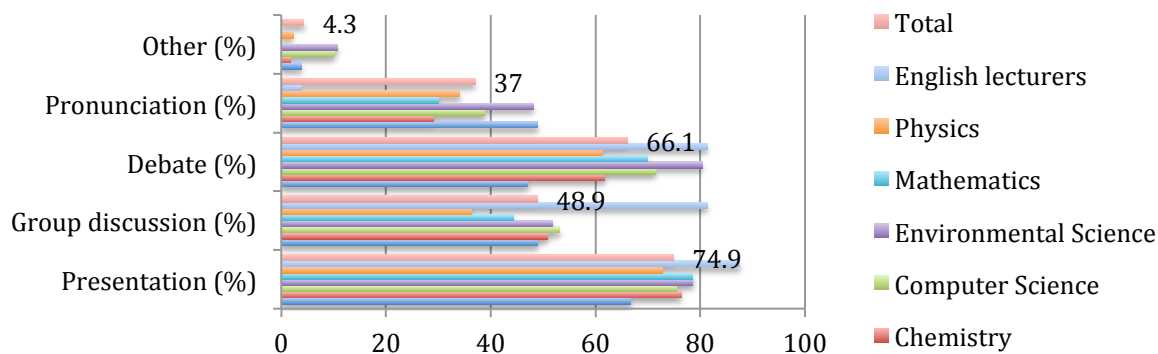


Figure 12 Speaking skills in the ESP course

#### 4.3.2 Listening skills

Questionnaire item C1.2 explored stakeholders' ideas about which listening skills should be included in the content for the ESP course (see Appendix E). The listening skills indicated in the questionnaire included listening strategies, understanding a variety of accents, note-taking skills, understanding main ideas on TV and radio, comprehending messages from conversations, reports and presentations, listening to instructions, listening to lectures, and an *other* option.

Figure 13 shows the overall perceptions of the seven departmental stakeholder groups regarding listening skills. Among the listening skills, listening strategies were preferred by the majority of the seven groups, accounting for 75.1% responses (256 out of 341) participants. Therefore, listening strategies must be considered the most important skill to be included in the ESP course for Cambodian students. Another skill, one supported by a little more than half of all participants, was comprehending messages, which was chosen by 53.1% (181 out of 341) of participants. It is interesting to note, however, that 93.8% of English lecturers prioritised note-taking skills, and 68.8% of them selected comprehending the messages. In

addition, the other listening skills, including understanding accents, understanding main ideas, listening to lectures, and listening to instructions, were considered to be of lower priority, and accounted for 37.5, 36.4, 25.5, and 21.1% of participating stakeholders respectively. Of the participants 0.9% added listening for details and watching movies in English. In short, the results indicate that listening strategies should be a prioritised listening skill in the ESP course.

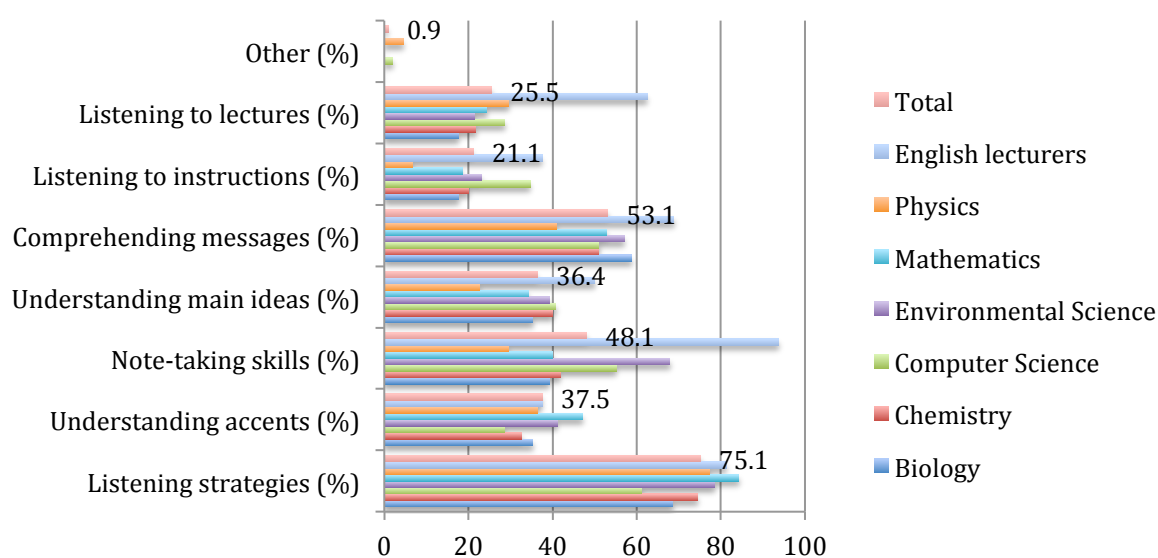


Figure 13 Listening skills in the ESP course

#### 4.3.3 Reading skills

Questionnaire item C1.3 explored the stakeholders' views about the reading skills that should be included in the content of the ESP course (see Appendix E). The reading skills incorporated reading strategies, speed reading, general comprehension, reading specialist texts, reading textbooks, reading technical journal articles, reading technical manuals, reading instructions, reading authentic texts, and an *other* option.

Figure 14 shows overall and individual departmental perceptions of the seven departmental stakeholder groups in regard to the incorporation of reading skills in ESP. The majority of the participants, accounting for 71.8% (245 out of 341), preferred that reading strategies be incorporated into the ESP content of reading. The other two skills that had similar overall scores, around half of the total participants, were reading specialist texts (50.4%) and reading technical journal articles (47.8%). Figure 14 also shows the desire for general comprehension and reading authentic texts among the English lecturers (75% and 56.3%). This indicates the importance of comprehending texts in general, for overall comprehension in reading. It was noted by 1.8 per cent of participants that there was a need for the incorporation of reading internet-based content, and understanding and evaluating the reliability of reading sources. In summary, the results indicate that a priority should be placed on reading strategies as a reading skill in the ESP course, with an emphasis also on reading specialist texts and technical journal articles.

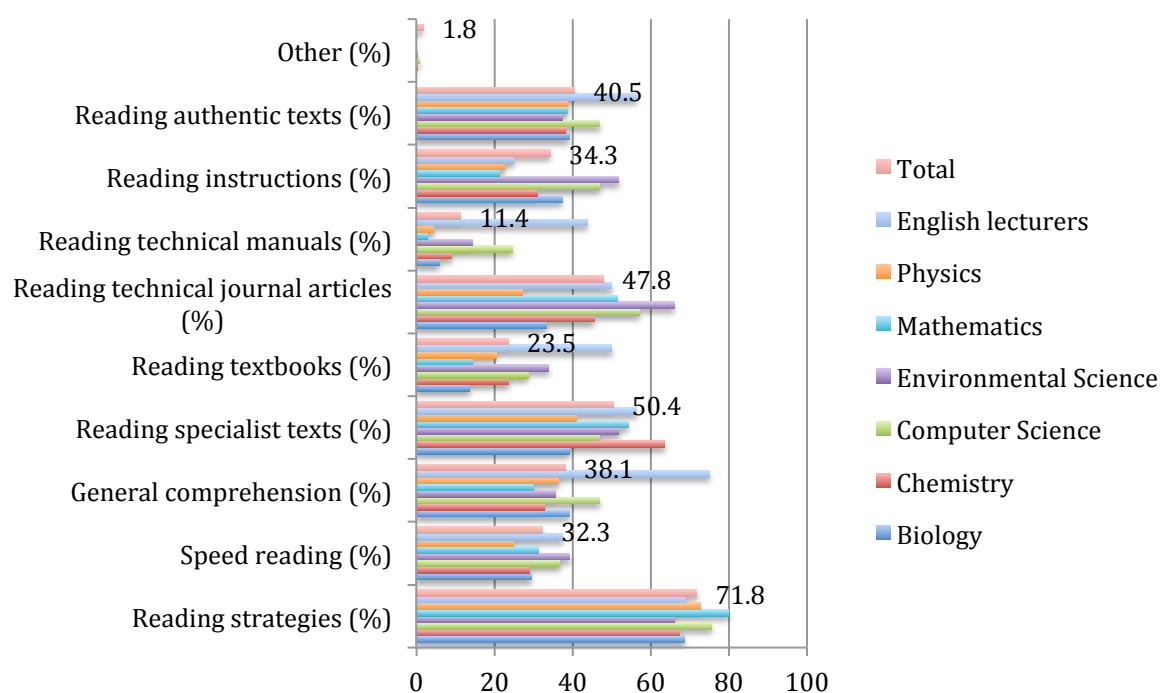


Figure 14 Reading skills in the ESP course

#### 4.3.4 Writing skills

Questionnaire item C1.4 examined stakeholders' preferences for writing skills in the ESP course (see Appendix E). The writing skills suggested in the survey comprised writing laboratory reports, writing field-trip reports, writing assignments, writing emails, writing different text types, writing summaries, note-taking skills and an *other* option.

Figure 15 displays overall and individual departmental perceptions of the seven departmental stakeholder groups towards writing skills. A majority of all the stakeholder groups preferred by far, writing assignments, which accounted for 74.2% (253 out of 341) of participants. Apart from writing assignments, almost half of the participants considered writing laboratory reports and writing field-trip reports important (49.3 and 43.7% respectively). This suggests that most participants saw the immediacy of writing skills for academic purposes.

Figure 15, overall, shows similar preferences by all of the seven discipline participants for writing assignments. This indicates the importance of writing assignments for undergraduate students throughout the six departments. The Chemistry participants' group, in particular, focused on writing laboratory reports, which accounted for 76.4% (42 out of 55) of Chemistry group participants. This shows the perceived necessity for laboratory report writing skills for Chemistry undergraduate students.

Figure 15 reveals another interesting finding too, of the Environmental Science stakeholder group's preference for writing field-trip reports in addition to writing assignments. Writing field-trip reports was selected by 64.3% (36 out of 56) of Environmental Science stakeholders. Another noticeable finding was that almost half of the Computer Science stakeholders considered writing summaries necessary. This suggests that there is a diversity of writing genres; some of which are discipline specific. Option *other*, which was selected by

1.8% of stakeholders, included writing of theses and reaction papers, and job related applications such as résumés, cover letters and letters of inquiry. This indicates a preference for academic and job application writing genres.

In summary, overall, most Faculty of Science stakeholders focused on writing assignments, with the emphasis on laboratory reports for Chemistry and field-trip reports for Environmental Science stakeholders. The findings also reflect the necessity of writing skills, such as note-taking and writing summary skills, for the writing tasks of the undergraduate students.

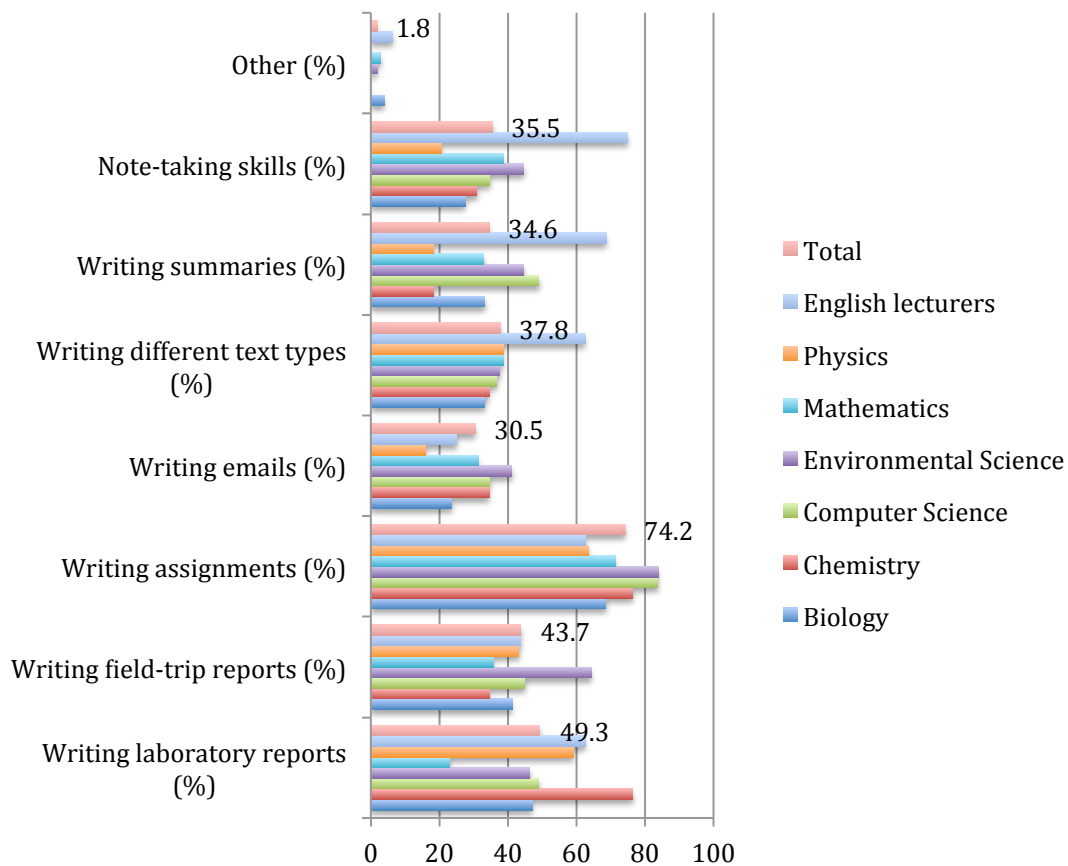


Figure 15 Writing skills in the ESP course

#### 4.3.5 Vocabulary subskills

Questionnaire item C1.5 investigated participants' preferences regarding vocabulary topics in the ESP course (see Appendix E). The vocabulary topics included vocabulary strategies, using vocabulary in context, learning specialist vocabulary, word formation and family, pronouncing specialist vocabulary and an *other* option.

Figure 16 illustrates the overall and departmental perceptions of the seven departmental stakeholder groups towards vocabulary topics. Around half of all stakeholders considered the five vocabulary topics equally important, with vocabulary strategies (64.3%), word formation and family (56%), using vocabulary in context (53.6%), learning specialist vocabulary (50.3%) and pronouncing specialist vocabulary (44.6%).

These results indicate a similar emphasis was needed for the five vocabulary subskills for the undergraduate specific academic disciplines. In addition, more than 80% of English lecturers prioritised learning specialist vocabulary (93.8%), using vocabulary in context (87.5%) and vocabulary strategies (81.3%). The *other* option, which was mentioned by 0.9% of participants, included translation of specialist terminologies. In short, the findings indicate the importance of incorporating vocabulary strategies, with an emphasis on specialist vocabulary, and using vocabulary in context, as the important vocabulary subskills in the ESP course content.

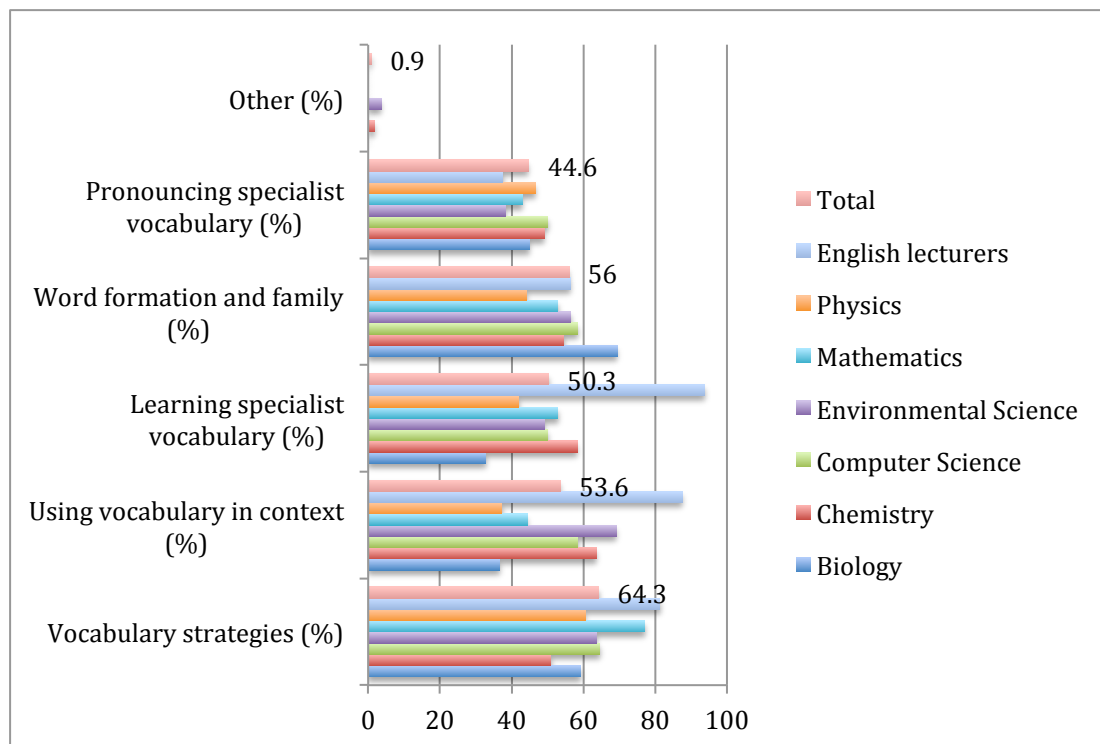


Figure 16 Vocabulary subskills in the ESP course

#### 4.3.6 Grammar subskills

Questionnaire item C1.6 asked for stakeholder opinions about the grammar topics, which are needed for the ESP course (see Appendix E). The grammar topics suggested incorporated present simple, past simple, present perfect, reported speech, passive voice, logical connectors, relative clauses and there was an *other* option.

Figure 17 shows the seven departmental stakeholder groups' preferences for grammar topics. Around half of all stakeholders considered the seven grammar topics, namely relative clauses (61%), logical connectors (54.2%), reported speech (52.4%), present perfect (50%), passive voice (49.7%), present simple (46.1%), and past simple (39.6%) as similarly important. The majority of English lecturers were particularly interested in relative clauses. Other grammar topics, which accounted for 7.7% of participants, included common mistakes of Cambodian speakers when they translate directly, all verb tenses, parts of speech, articles and

determiners, prepositions and other more advanced grammar points, such as types of clauses. Among the seven stakeholder groups, it is interesting to note that the English lecturers' group seemed to have the highest interest in all the grammar topics, and they are the most experienced in identifying grammar topics. These results might indicate similar perceptions of the importance of grammar topics among the six Faculty of Science disciplines.

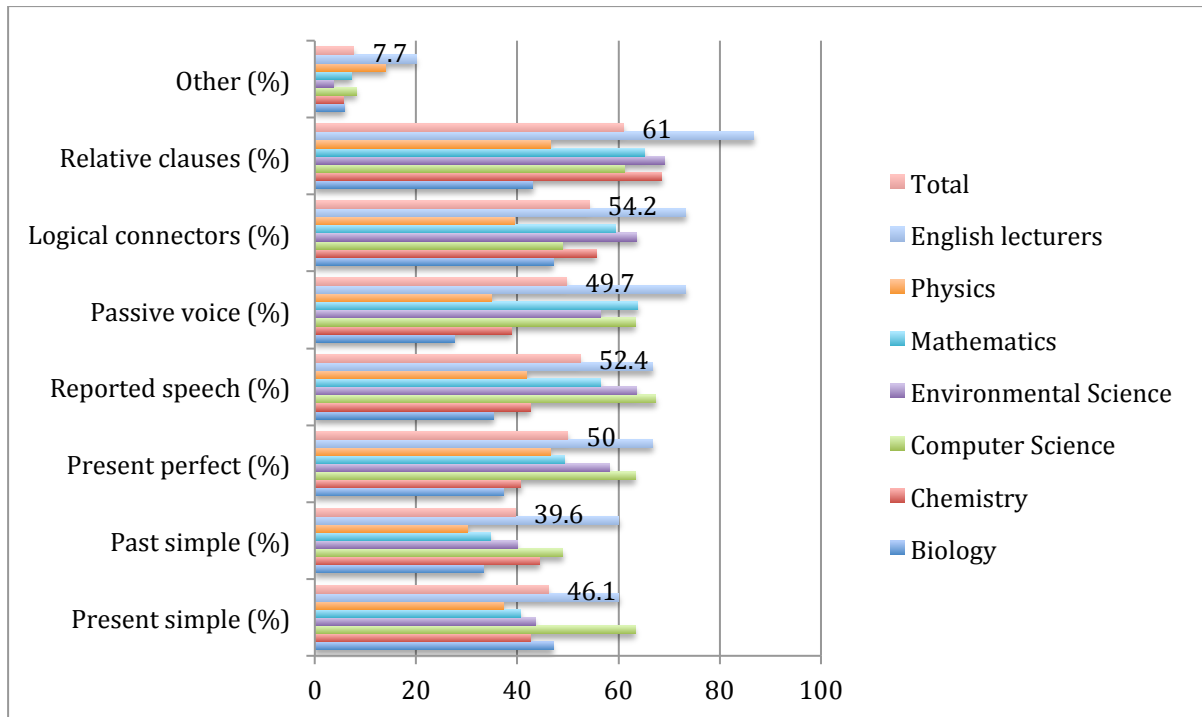


Figure 17 Grammar subskills in the ESP course

#### 4.3.7 Cross-cultural awareness

Questionnaire item C1.7 investigated stakeholder preferences about cross-cultural awareness as topics in the ESP course (see Appendix E). The cross-cultural awareness topics comprised politeness in different cultures, asking questions in different cultures, cultural knowledge, cultural stereotypes, taboo language, agreement and disagreement in different cultures, avoiding miscommunication, and an *other* option.



Figure 18 shows preferences for cross-cultural awareness topics being included in an ESP course indicated by the seven stakeholder groups. More than half of the participants preferred cultural knowledge (72.3%) and politeness in different cultures (59.3%). Interestingly, fewer than 50% of participants were interested in other topics, including avoiding miscommunication (41.9%), asking questions in different cultures (37.5%), agreement and disagreement in different cultures (36%), cultural stereotypes (31%), and taboo language (24.5%). However, most English lecturers emphasised avoiding miscommunication (87.5%).

This indicates that all stakeholders see the importance of teaching students to be aware of the need to communicate with people of different cultures. Other aspects of cross cultural awareness topics, which were selected by 1.2% of participants, were differences in cultural values, use of communication technology in different cultures, and comparing foreign cultures and Cambodian culture. More aspects will be further explored in the qualitative phase.

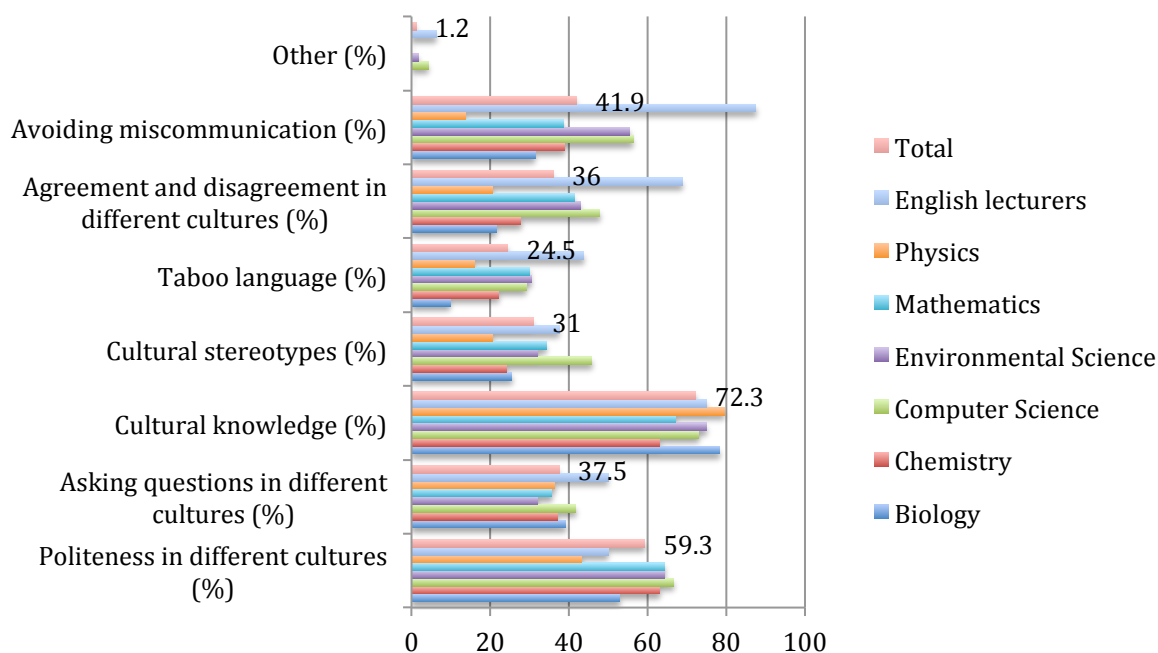


Figure 18 Cross-cultural awareness in the ESP course

#### ***4.3.8 Business communication***

Questionnaire item C1.8 sought the perceptions of stakeholders on business communication topics in the ESP course (see Appendix E). The business communication topics included differences in formal and informal language, communication in business meetings, language for presentation, language for self introductions, language for telephone interactions, conversation skills, business report writing, business letter writing, business email writing, and an *other* option.

Figure 19 shows the seven participant groups' preferences regarding business communication skills. Overall, the majority of participants emphasised differences in formal and informal language as the most significant topic, which accounted for 71.6% (244 out of 341) of participants. The other two business communication topics preferred by more than 50% of the total number of participants included language for presentations (54%) and business report writing (53.4%). These topics were also emphasised in the other questionnaire items about speaking and writing (see subsections 4.3.1 and 4.3.4). Few participants preferred communication in business meetings (46.9%), conversation skills (44.9%), business letter writing (41.6%), business email writing (39.6%), language for self-introductions (31.4%), and language for telephone interactions (26.7%). In particular, it should be noted that a large number of English lecturers' preferences were for conversation skills (87.5%), differences in formal and informal language (81.3%) and language for presentations (81.3%). Option *other*, which accounted for 0.9 % of participants, incorporated negotiation skills, so it would seem that negotiation skills need not be given a high priority in an ESP course.

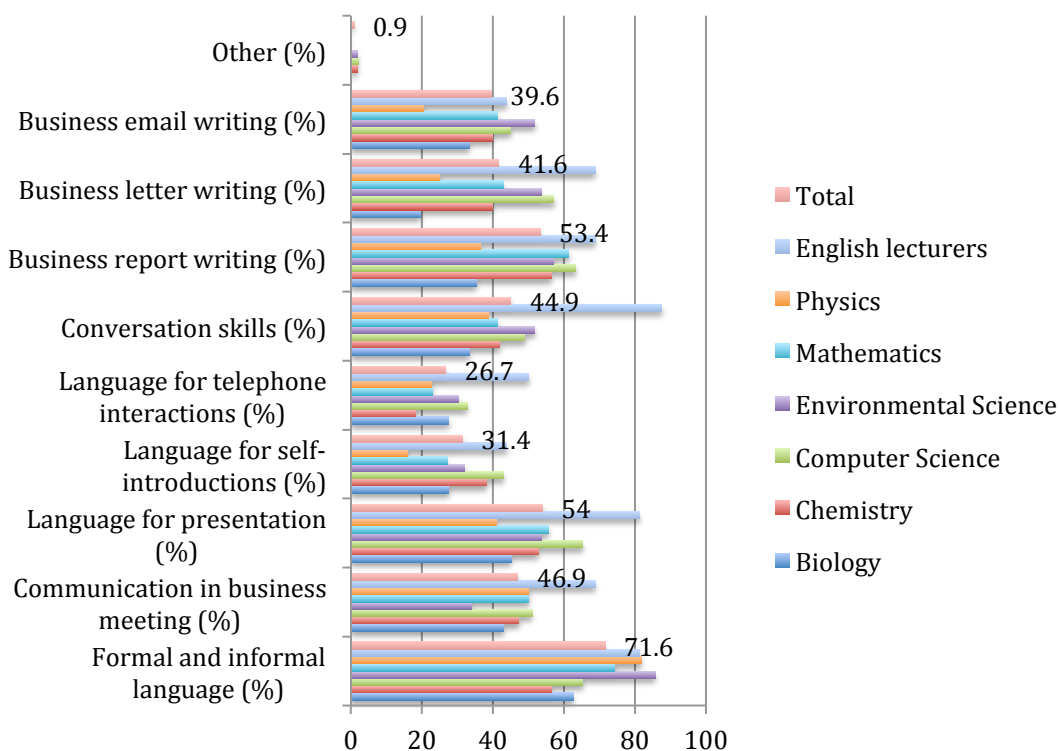


Figure 19 Business communication in the ESP course

#### 4.3.9 Order of importance of the ESP course content areas

Questionnaire item C2 asked participants to rate the eight ESP course content areas in terms of importance in the EAP and EOP fields. A Spearman’s Rho was run to identify the preferred order of topics by comparing both EAP and EOP skills.

Table 9 (p. 109) shows Spearman’s Rho correlation coefficients between the importance of the eight content areas for academic purposes and the same eight areas for occupational purposes. The eight content areas include speaking skills, listening skills, reading skills, writing skills, vocabulary subskills, grammar subskills, cross-cultural awareness and business communication. The Spearman’s Rho correlation coefficient scores reveal the order of importance; the highest score is interpreted as the most important course content area, whereas the lowest score is interpreted as the least important content area for the ESP course.

Table 9 Spearman's Rho correlation scores of the eight ESP course content areas

		<b>For occupational purposes</b>							
		Speaking	Listening	Reading	Writing	Vocab.	Grammar	Cross culture	Business comm.
<b>For academic purposes</b>	Speaking	.448**							
	Listening		.472**						
	Reading			.500**					
	Writing				.549**				
	Vocab.					.511**			
	Grammar						.492**		
	Cross-culture							.565**	
	Business comm.								.401**

*Ns* = not significant ( $p > .05$ ), \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Based on the statistical analysis, the order of importance among the eight ESP content areas is: cross-cultural awareness ( $r_s = .565$ ), writing ( $r_s = .549$ ), vocabulary ( $r_s = .511$ ), reading ( $r_s = .500$ ), grammar ( $r_s = .492$ ), listening ( $r_s = .472$ ), speaking ( $r_s = .448$ ), and business communication ( $r_s = .401$ ). It is logical that listening, speaking, and business communication are the three content areas that have similarly low coefficient values. English is a foreign language in Cambodia, so most of the time the Khmer language is used for communication. In addition, while business communication might be useful for undergraduates' future jobs, they possibly are not very useful for their current academic studies. However, there was only a slight difference between each score, making it challenging for ESP course designers to directly meet these expressed needs of the stakeholders. Therefore, these results were further explored in the qualitative interview phase.

**4.4 Participants’ perceptions about the integration of the ESP course in the undergraduate program**

Questionnaire items D1 to D13 surveyed 341 participants’ opinions about issues in an ESP course (see Appendix E). Questionnaire item D1 explored participants’ perceptions about the focus of the ESP course.

Figure 20 shows that the majority of the participants preferred a discipline specific ESP course: this was the view of 71% (235 out of 341) of participants. In other words, each ESP class should target undergraduate students from the same specialisation. This demonstrates that an ESP course is needed that addresses the undergraduate students’ specific needs as determined by each Faculty of Science department. Notably, more than 68% of the graduate employees suggested one ESP course for all Faculty of Science departments. In addition, option *other*, which was selected by 3.3% of participants, included both general English and ESP. Specifically, one respondent wrote that many students, especially those from the provinces, possessed low proficiency in English; therefore, they needed to improve their general English proficiency through the general English course. Given this very reasonable view of the situation in Cambodia, this question was further explored in the qualitative phase.

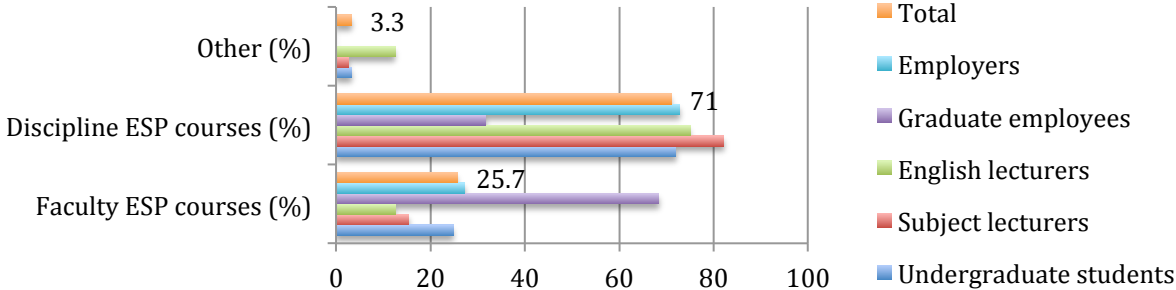


Figure 20 The focus of the ESP course

Questionnaire item D2 surveyed participants' perceptions about the domain of the ESP course.

Figure 21 reveals that 64.5% (213 out of 341) of participants preferred the ESP course to focus on both English for academic purposes and English for occupational purposes. Interestingly, 23% (76 out of 341) preferred English for academic purposes and 12.1% (40 out of 341) preferred English for occupational purposes. Among the five stakeholder groups, almost half of the subject lecturers (47.5%) suggested that an ESP course should focus on English for academic purposes. These findings indicate that the stakeholders have a preference for English for both academic and occupational purposes, but with more emphasis on English for academic purposes over English for occupational purposes.

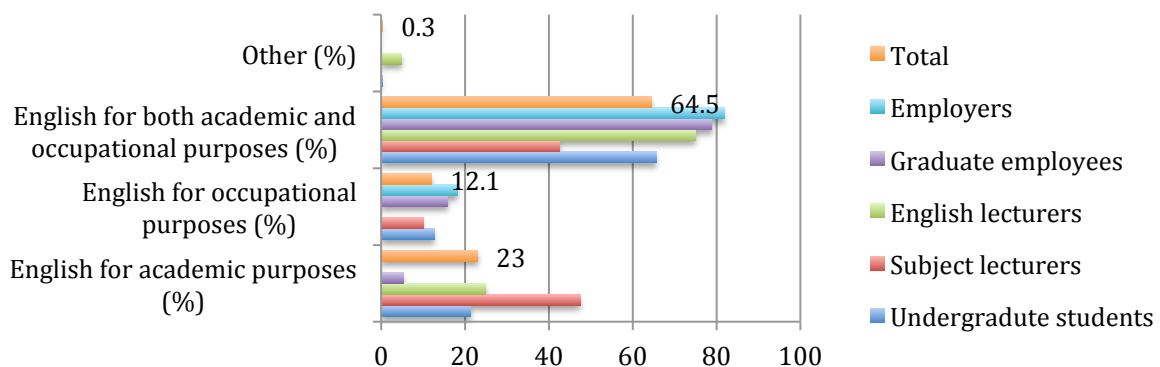


Figure 21 The domain of the ESP course

Questionnaire item D3 surveyed participants' perceptions about the duration of the ESP course.

Figure 22 shows that almost half of the 341 participants (46.7%) preferred the ESP course duration to be two semesters: but then, 31.5% preferred the course duration to be three semesters. Option *other* included responses that indicated the length should be four to six

semesters. Interestingly, those who used the option *other* were mainly graduate employees (45.5%). The participants who chose two or three semesters argued that this duration should be enough to cover all the necessary specific English skills necessary for undergraduate students. However, those who noted four or more semesters claimed that the more semesters, the better, because a longer the course would be able to provide more in-depth study of the necessary English elements and so improve undergraduate students' English proficiency up to a working competent standard. While there were some differences of opinion evident in the answers, the majority of the participants preferred an ESP course to be at least two semesters in duration.

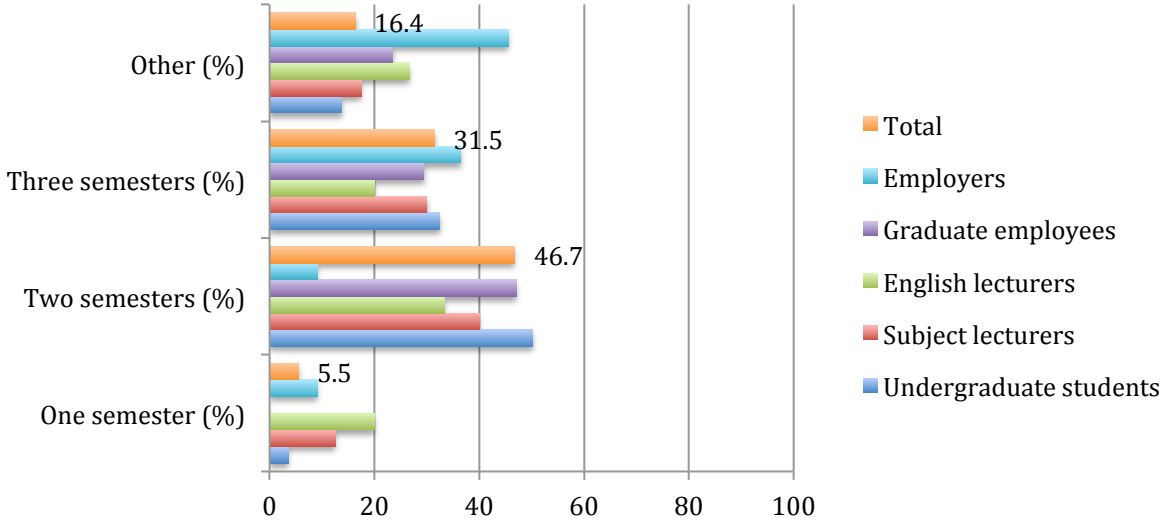


Figure 22 The duration of the ESP course

Questionnaire item D4 surveyed participants about the appropriate proficiency level of the ESP course.

Figure 23 shows that more than half (52.2%) of the 341 participants thought there should be three levels in the ESP course, although 31.9% preferred that the course to consist of two

levels. Option *other* included four levels and more. The results show that most preferred that the ESP course be offered with at least two proficiency levels.

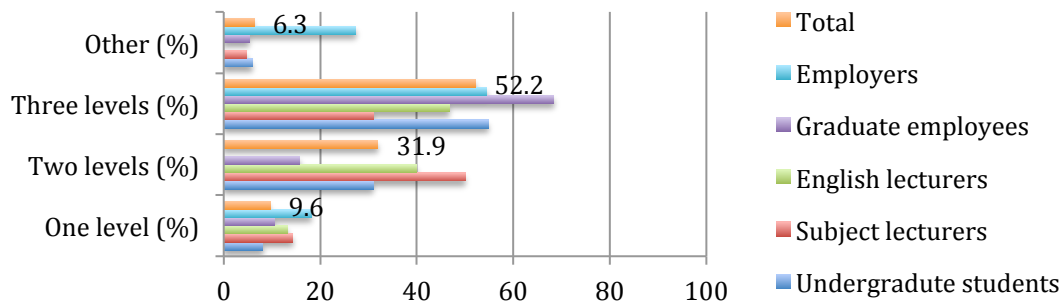


Figure 23 The proficiency level of the ESP course

Questionnaire item D5 surveyed participants about their perceptions of the pre-requisite requirements in terms of English proficiency for the ESP course.

Figure 24 shows slightly different preferences regarding the pre-requisite levels for the ESP course, although the intermediate level received the highest percentage, accounting for 27.6% (67 out of 241) of participants. And interestingly half of the English lecturers selected the intermediate level. However, an equivalent number of participants preferred the pre-requisite level to be elementary (20.7%), pre-intermediate (22.9%), or none (22.6%). Using option *other*, 6.2% of participants, argued that students should be placed in the right level based on placement test results. In short, the findings reflect the mixed views on this matter so that perhaps some flexibility may be appropriate to accommodate the mixed levels of students' general English proficiency and different considerations may need to be applied.



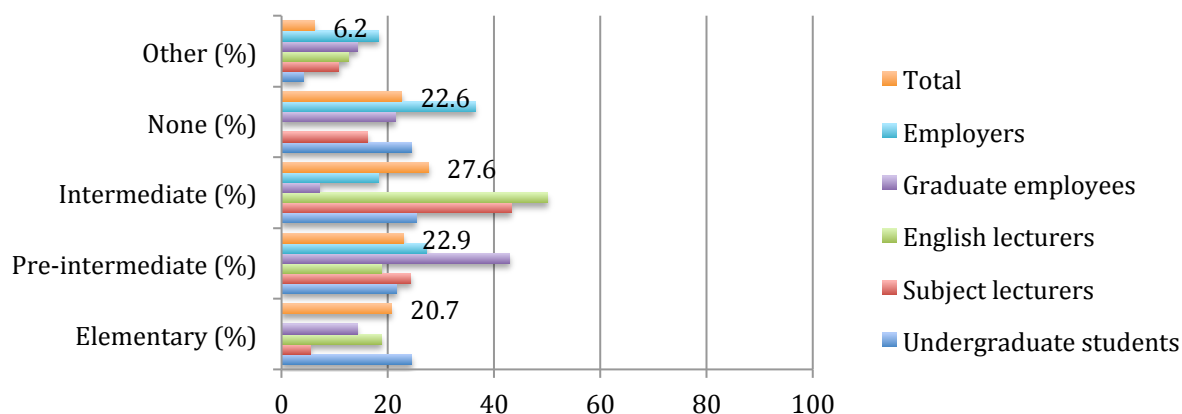


Figure 24 The pre-requisite level of the ESP course

Questionnaire item D6 surveyed participants about their suggestions on the syllabus of the ESP course.

Figure 25 shows an overall high preference among the majority of the participants for a skills-based syllabus: this option accounted for 85% (289 out of 341) of participants. The second type of syllabus and equally preferred, were a competency-based syllabus, and a task-based syllabus (57.4 and 41.5% respectively). However, the majority of the English lecturers (87.5%) were particularly in favour of a task-based syllabus. One response to these results would be an integration of the three syllabi types as being most appropriate, perhaps with more emphasis on a skills-based syllabus, followed by competency-based and task-based syllabi. The matter of the ESP course syllabus was investigated in the qualitative phase as a means of validating the quantitative findings of the five stakeholder groups, especially as many did not have specialised knowledge about English language teaching and learning.

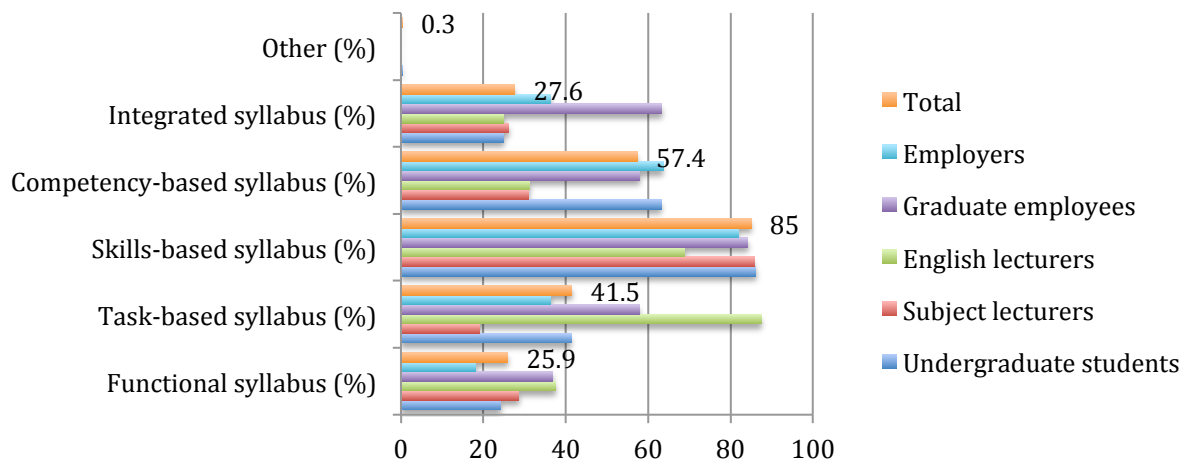


Figure 25 The preferred syllabus for the ESP course

Questionnaire item D7 surveyed participants about the preferred assessment of the ESP course.

Figure 26 illustrates that more than 75% of participants had preferences for presentations, written assignments, and final exams (83% (or 283), 79.8% (or 272), and 76.5% (or 261) out of 341 participants respectively). The next four favoured types of assessment, which were preferred by more than 50% of participants, included quizzes (64.2%), midterm tests (63.9%), class participation (59.2%), and attendance (55.4%). The results reflect a combination of traditional and alternative assessment types for the ESP course, with a greater focus on alternative assessment over traditional assessment types.

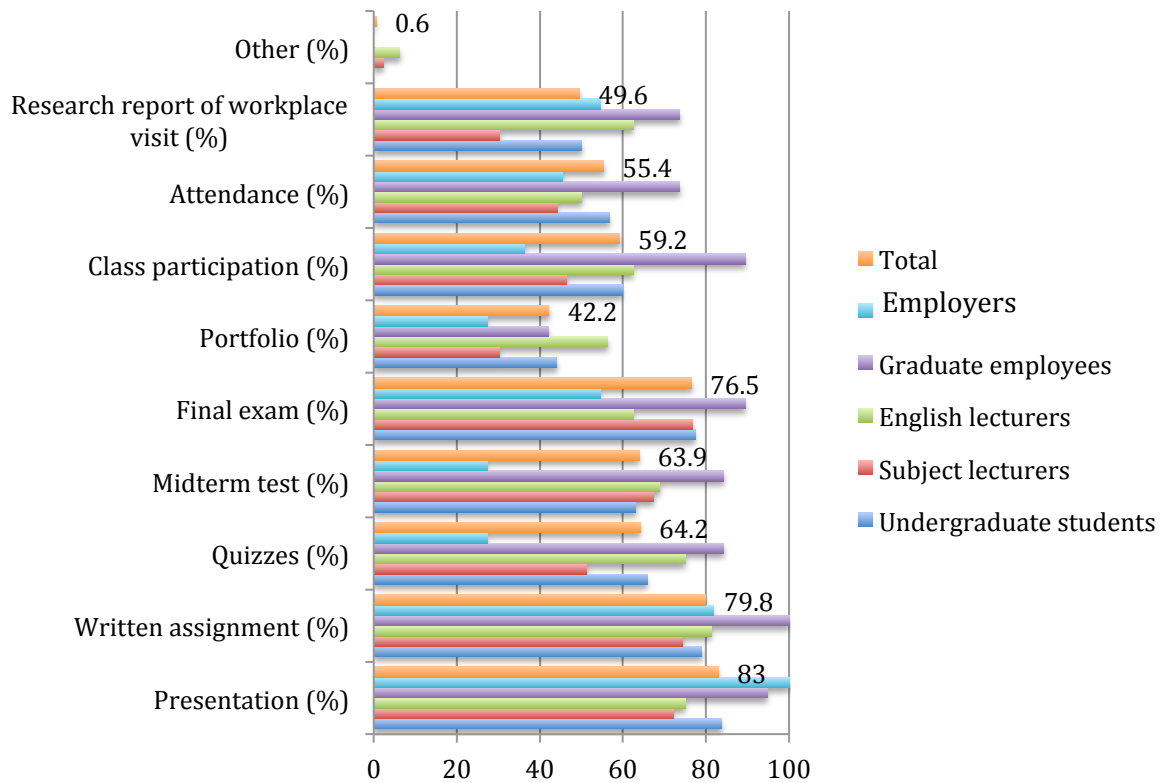


Figure 26 The preferred assessment for the ESP course

Questionnaire item D8 surveyed participants about the status of the ESP course.

Figure 27 shows that more than half of the stakeholders asserted that the ESP course should be elective: this option was selected by 72.1% (246 out of 341) of the participants. Notably, the two stakeholder groups who voted for the elective option were the undergraduate students (76.5%) and subject lecturers (75.6%) However, more than half of the English lecturer stakeholders (57.1%) and also the graduate employee stakeholders (55.6%) believed that an ESP course should be compulsory. These contradictory perceptions were further investigated in the qualitative phase as there are significant ramifications that arise from a decision on this matter, regardless of which option is selected.

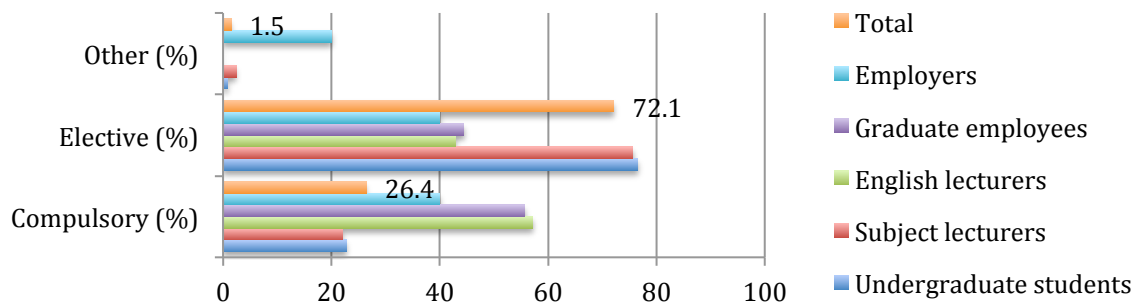


Figure 27 The status of the ESP course

Questionnaire item D9 surveyed participants about the potential student enrolment in the ESP course.

Figure 28 shows that the overall majority of stakeholders had a positive opinion regarding an ESP course and thought that the number of student enrolments would be high: 88.4% (296 out of 341) of participants agreed with this thinking. However, it is interesting to note that 33.3% of English lecturers believed that the enrolment would be low. While a similarly high number of participants from the five stakeholder groups perceived that the student enrolment would be high, the other 5.1% of participants were uncertain and thought that it depended on how undergraduate students perceived the importance of the ESP course. This finding needs to be reconciled with findings of D8, which indicated that the majority of stakeholders believed that the course should be elective instead of compulsory. Therefore, these two issues were further explored in the qualitative phase.

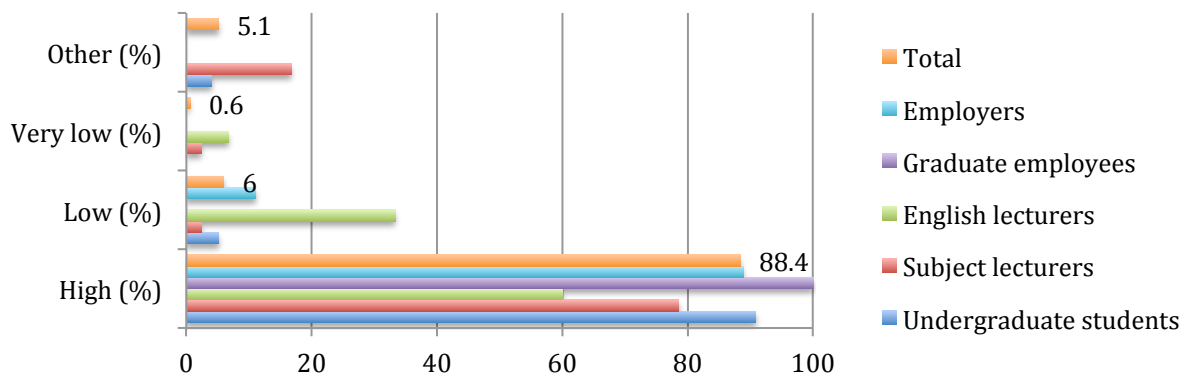


Figure 28 Enrolment in the ESP course

Questionnaire item D10 surveyed participants about possible challenges they could see ahead in the development of the ESP course. This question assisted in anticipating possible contextual challenges that might arise in the development of ESP curriculum at RUPP.

Figure 29 shows that three main challenges were equally acknowledged by more than half of the participants. These were that there were English lecturers with little specialist knowledge, students with low English proficiency, and students with mixed English proficiency. These responses accounted for 64.9% (220), 61.4% (208), and 52.2% (177 out of 341) respectively of responses provided by participants. It is noticeable that 87.5% of English lecturers acknowledged that English lecturers, with little specialist knowledge of undergraduate students was a principal challenge. In addition, 75% of English lecturers also argued that students with low English proficiency was another main challenge. Interestingly, 62.2% of undergraduate students also acknowledged low English proficiency as the main challenge. In short, the main challenges were recognised by and pertain to both students and teachers of the ESP course, and therefore need to be addressed in the preparation and development of the ESP course.

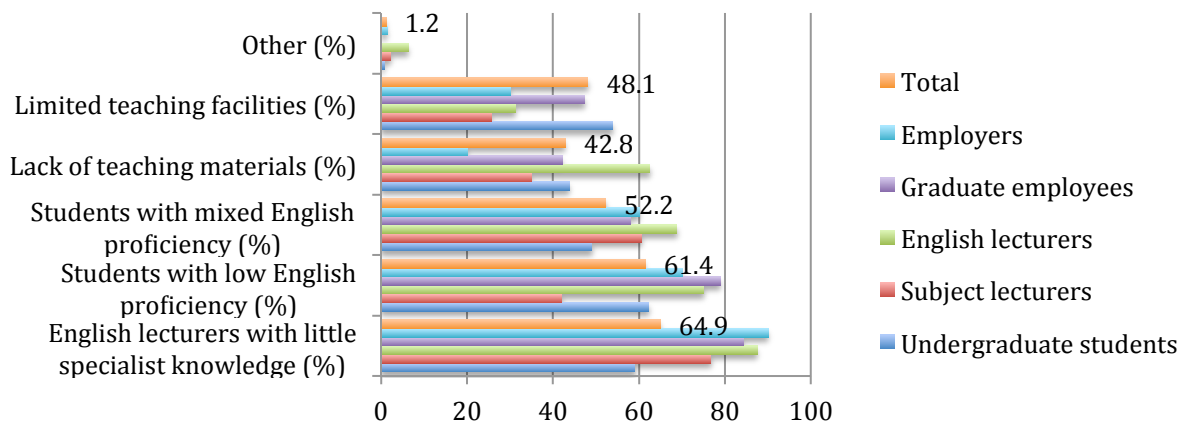


Figure 29 Challenges in ESP course design

Questionnaire item D11 asked participants about possible measures to deal with the challenges of designing the ESP course.

Figure 30 shows that more than 50% of the total participant sample selected three main measures from five options provided: specifically they looked for collaboration between English and subject lecturers, collaborative learning and teaching between students and teachers, and a development in ESP training for English lecturers. These measures were provided by 64.9% (220), 57.8% (196), and 56.3% of (191 out of 341) respectively of participants.

In addition, the majority of English lecturers (81.3%) in particular, were in favour of developing ESP training for ESP lecturers. This could well mean that English lecturers acknowledge that they need extra training in ESP teaching in order to overcome their lack of specialist knowledge of the undergraduate students' subject areas, as is evident in Figure 26. Interestingly, more than 60% of the graduate employees (63.2%) and employers (70%) suggested inviting guest speakers to provide lectures. These issues will be further pursued in the qualitative phase.

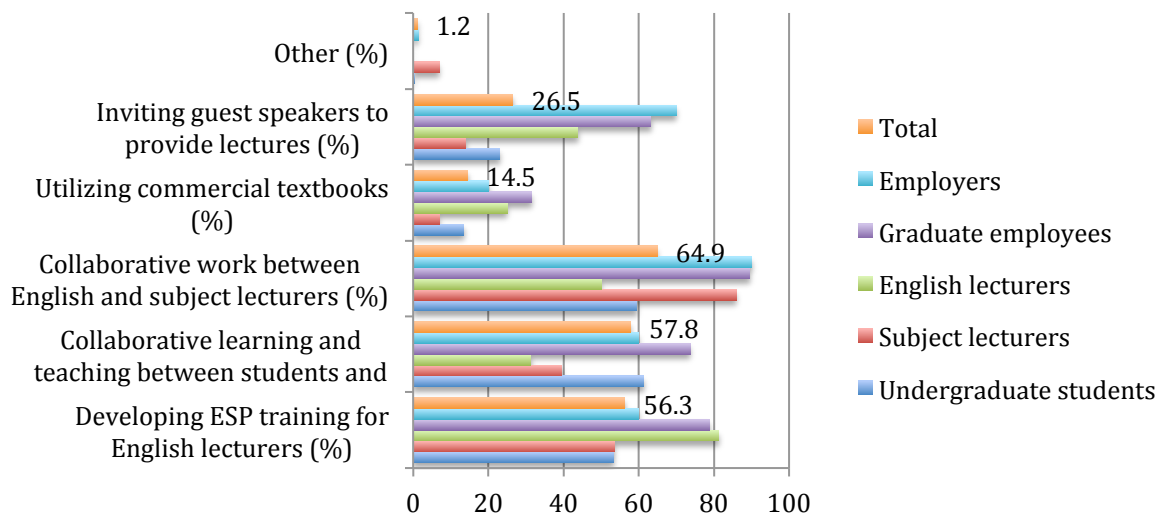


Figure 30 Suggested measures for assisting with ESP course design

Questionnaire item D12 surveyed participants about teaching materials to be used in the ESP course.

Figure 31 shows that the majority of the participants had a preference for teacher-made materials: these responses accounted for 87.3% (296 out of 341) of participants. The other two equally acknowledged scored types of teaching materials included commercial textbooks (72.9%), and authentic materials (70.5% of 341 participants). Most graduate employees (84.2%) in particular, preferred guest lecturer notes. In short, the findings suggest that the prospective ESP course should combine teacher-made materials, commercial textbooks and authentic materials, as well as guest lecture notes.

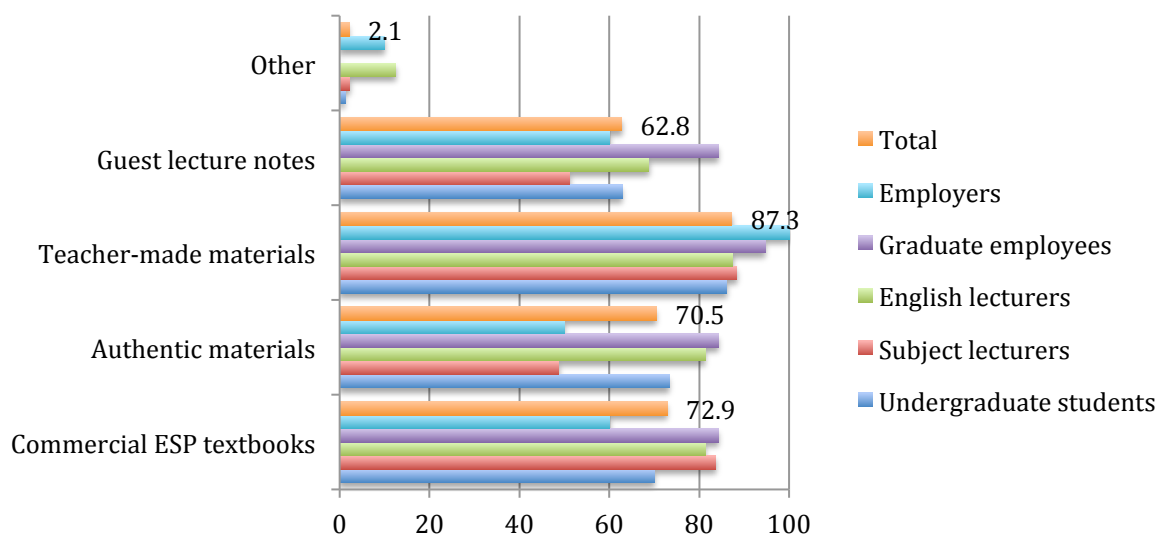


Figure 31 Teaching materials for the ESP course

#### 4.5 Summary

Overall, General English and the prospective ESP course were identified as necessary for undergraduate students of the Faculty of Science at the Royal University of Phnom Penh. That is, the development of an ESP course was supported by the majority of stakeholders who thought that this should be additional to the existing English subject. The results also reveal that the majority of the participants preferred a discipline specific ESP course for each of the six Faculty of Science departments rather than having a general ESP course for the whole Faculty. This matter is discussed further in the qualitative findings.

Eight content areas for the ESP course were presented. The findings reveal stakeholders' suggestions and, based on the statistical analysis, the order of importance of the content areas from the most to least useful, were cross-cultural awareness, writing, vocabulary, reading, grammar, listening, speaking and business communication. However, the differences between the content areas were not significant.



The preferred topics for each ESP content area were identified. Cross-cultural awareness aspects should include cultural knowledge and politeness in different cultures. The preferred writing genres were writing assignments and job related tasks such as emails. Vocabulary should incorporate vocabulary strategies and word formation, while grammar subskills that include relative clauses and logical connectors were wanted. Listening and speaking skills are interrelated, and the preferences were for including listening strategies, presentation and debates. Finally, it was thought business communication should consist of formal and informal language and conversation skills.

The participants' perceptions about the status of the ESP course were also identified. The preferred duration was found to be two semesters, although some of the stakeholders indicated that they preferred as many semesters as possible. Regarding the syllabus for the course, the skills-based syllabus outnumbered other types.

The findings reveal possible challenges for designing the ESP course. These challenges include English lecturers with little specialist knowledge and undergraduate students with low levels of English proficiency. A number of suggested measures to resolve these problems included proper specialist training and workshops for ESP teachers and also collaboration between subject lecturers and English lecturers.

The results provide a comprehensive picture of the perceived language needs and contextual constraints for the development of ESP course in the Cambodian context. Although the case of only one university was employed, the results and the questionnaire can be employed in other universities. The next chapter focuses on qualitative aspects of this study. It presents the findings from the interviews, followed by an integration of the quantitative and qualitative findings.

## CHAPTER 5

### QUALITATIVE FINDINGS

This chapter discusses the qualitative findings of this research. The qualitative findings are divided into seven themes or sections, based on the sections of the interview questions.

Section 5.1 summarises the participants' perceptions about prioritised skills and tasks for the ESP course. Section 5.2 shows the participants' perceptions about whether *business communication* should be included in the course. Section 5.3 explores stakeholder objectives for *one ESP course for all*. Section 5.4 elaborates on whether the ESP course should be compulsory or elective. Section 5.5 provides an in-depth description of the preferred teaching methodology for the ESP course. Participants' perceptions about suitable assessment for the ESP course are considered in section 5.6. Section 5.7 presents what the participants' perceived as possible challenges for developing and implementing the ESP course, and their suggestions for dealing with these challenges. The final section (5.8) summarises the key findings of the qualitative phase and integrates the qualitative with the quantitative findings.

In order to facilitate the reading of this chapter, the profile of participants in the qualitative phase is set out again. Thirty participants from five groups of stakeholders participated in the interview phase, and were divided into two categories (see Table 10 next page). The first category, the academic stakeholder group, comprised six undergraduate students, six subject lecturers, and six English lecturers. The second category group, the industry stakeholder category, consisted of six graduate employees and six employers. There were two interview schedules used. The first was for undergraduate students, subject lecturers, English lecturers and graduate employees, and the second was for the employers. The main difference was that the last group did not have to answer the questions on the challenges and measures needed in ESP course design. Another difference was with the first interview question. While the first

four groups of participants were asked about the tasks or skills that undergraduate students needed, the employer group was asked about the tasks that the graduate employees needed to perform and whether these tasks should be included in the ESP course.

Table 10 Interview participant codes (B)

Discipline	Academic stakeholders			Industry stakeholders	
	Undergraduate Students'	Subject Lecturers'	English Lecturers'	Graduate Employees'	Employers' Code
	Code	Code	Code	Code	
Bio	UBi	LBi		GBi	EBi
Che	UCh	LCh		GCh	ECh
Com	UCo	LCo		GCo	ECo
Env	UEn	LEn		GEN	EEn
Mat	UMa	LMa		GMa	EMa
Phy	UPh	LPh		GPh	EPh
Eng			EnL1-EnL6		

*Note:* Bio: Biology; Che: Chemistry; Com: Computer Science; Env: Environmental Science; Mat: Mathematics; Phy: Physics; Eng: English

### 5.1 Participants' preferences regarding the appropriate skills and tasks for the ESP course

The first interview question for the first four stakeholder groups asked about the kind of specialised English skills or abilities or tasks that they thought most Faculty of Science undergraduate students needed, and would assist them with their academic studies and future jobs. The first interview question for the employer group was similar to the one for the first

four participant groups, that is *could you tell me what kind of tasks (job or activities) do your employees engage in that would require English skills?* Different participants listed different skills and abilities that should be focused on in the ESP course. Section 5.1.1 presents the perceptions of the academic stakeholders and section 5.1.2 sets out the industry stakeholders' perceptions of skill or task priorities in the ESP course. The skills and abilities noted in the responses from both questions are combined for both sections together and reflect the most important skills that need to be developed in the ESP course for the science undergraduate program. The reason the academic and industry groups are divided is to highlight differences in their perceptions.

### ***5.1.1 Academic stakeholders' preferences***

Thirteen out of eighteen (72%) academic stakeholders (e.g., UBi, UCh, UCo, UPh, LCh, LEn, LMa, LPh, EnL1, EnL2, EnL3, EnL4, EnL5) thought that reading should be a prioritised skill in the ESP course. Those who chose reading as a priority justified their choice with similar reasoning, believing that it mainly helped students with their research and other study related tasks. UCo, UPh, LMa, and LPh argued that students needed to do a great deal of research, and many of the documents are written in the English language; therefore, good reading skills are required. Further, LCh acknowledged that science documents in Khmer were limited, so students were required to do research across documents or books written in English to broaden their knowledge. In addition, UBi explained, students would be able to read more effectively and efficiently when they possessed relevant reading strategies. Specifically, she elaborated:

To read documents in English, students need reading skills because most books and documents whether in the library or on the Internet are in English. Therefore,

possessing reading skills would help students in reading speed and comprehension through targeting the points that they want. (UBi)

UCh similarly believed that reading skills were necessary for undergraduate students. He noted:

I think that reading skills are the most required skills because when we [students] study we need to do a lot of reading. If we couldn't comprehend the texts, it's useless, but if we can comprehend about what is written, we will learn a lot. (UCh)

Interestingly, five out of six (83%) English lecturers (e.g., EnL1, EnL2, EnL3, EnL4 and EnL5) also argued that equipping students with the necessary reading skills should be one of the main objectives of the ESP course. They added that the course should enable students to read effectively and efficiently. EnL1 explained:

The purpose of the English language [ESP] program is to help students with the reading texts for their major subject. I meant, because the books or most of the books that students need to do research are in English, so they need these (reading) skills in order to comprehend the meaning of the contents of the textbooks in English. (EnL1)

EnL5 added that reading was an essential component of writing, and most students' assignments were a synthesis from what was read. He elaborated:

Reading is the most important skill, because they [students] need to read for information. And after they have the information, they have to write... a report... a procedure of a program application that they have designed. (EnL5)

Similar to EnL5, LEn also believed that reading and writing skills are complementary skills. She explained in other words:

I think writing and reading should go together. If a student doesn't know how to read appropriately, he or she won't have any ideas to write. So, their studies would also be hard. (LEn)

Overall, academic stakeholders recognised the primary importance of reading skills for students' academic studies.

Three out of 18 (17%) academic stakeholders (e.g., EnL5, LEn, UCh) argued that writing skills were necessary for undergraduate students. Again, both EnL5 and LEn believed that the teaching of reading and writing should be integrated, because students needed to read in order to write better. In addition, UCh noted that he would need to write in English for his future career. He elaborated:

I think that writing skills will be necessary for my future career because in the future I have to write appropriately, for example, using the correct word choice in the workplace. (UCh)

Two out of eighteen (11%) academic stakeholders (e.g., EnL6, LCo) considered speaking an important skill for undergraduate students in their future jobs. Both EnL6 and LCo believed that they need speaking skills for professional careers. LCo justified his choice based on job requirements, commenting:

They [students] should be able to communicate by employing technical language in addition to ordinary communication language, meaning when they have a technical meeting, for example, they should be able to do presentation... respond through emails or answer the phones. (LCo)

Only one academic stakeholder thought listening was the most important skill. UBi said that she needed this skill in order to listen to her foreign instructors. She elaborated:

Listening skill helps students to better understand and communicate with foreign lecturers who teach us [students] in English. (UBi)

Interestingly, however, LBi argued that all four of the macro-skills were equally important for students because of their interrelated nature. She elaborated:

They [listening, reading, speaking, and writing] are equally important because if they [students] can speak well, but poor at listening, they would not be able to communicate effectively. And if they are poor in writing... they cannot write well. If they are poor at reading... they cannot do a lot research and cannot improve knowledge... they cannot comprehend the reading [articles] well. So, I think all the four macro-skills are equally important. (LBi)

### *5.1.2 Industry stakeholders' preferences*

Regarding reading, seven out of twelve (58 %) industry stakeholders (e.g., GCh, GMa, EBi, ECh, ECo, EMa, and EPh) claimed that graduate employees needed to perform a number of tasks employing reading skills. Both GCh and GMa mentioned that when they were students and also now when working, they needed reading skills in order to research documents and books from developed countries. GMa specified:

...for science, [e.g.] Mathematics, students need to understand technical terminology in order that they can read books, documents from other more developed countries than our [Cambodia] country. (GMa)

EBi, ECh, ECo, EMa, and EPh (42%) believed that reading in English was a critical task in the workplace, including for research and routine tasks, and self-development. Regarding research tasks, EBi, who worked at an international company, noted that he and his subordinates needed to read English documents, such as reports and online articles. He elaborated:

...my subordinates and I currently use English to read documents in English that are related to our work. These include documents relating to agriculture, raising animals, animals' health and vaccination. These documents are found in the company manuals and over the Internet. (EBi)

The employees' tasks included work related research, which required both research and reading skills. EMa, for instance, explained:

Obviously, if they [teachers] want extra documents to teach their students, they can also do research through the Internet or Google... In addition, most high quality books are written in English, so they need to be able to read in English in order to read those books. (EMa)

Employees also needed reading simply for routine tasks. ECh claimed that his subordinates needed reading skills for their daily, monthly, and yearly tasks. For example, he pointed out:

Regarding reading, there is a so-called manual that offers guidelines and procedures on how to perform tasks appropriately and based on a set standard. There are also a number of policy documents, written in English, so they [subordinates] are required to read [these documentation] in order to gain specific information they need. (ECh)



Similar to academic stakeholders, EPh claimed that his colleagues needed to read in order to help them to write better. Specifically, he elaborated:

Normally, when reading, we [employees] need to comprehend the meaning of the lessons or documents. Understanding main ideas or specific details assists writing effectively and efficiently because mainly we write based on ideas we've synthesised from each reading. (EPh)

Besides work related tasks, the employer group mentioned that reading was needed for self-development. ECo maintained that he and his subordinates read a variety of articles on both technical and general topics to improve their careers. Specifically, he explained:

...their [computer employees'] work require them to always keep studying... Their specialisation needs them to read [almost] every day in English... Regarding reading articles, there are various topics because sciences consist of articles relating to specific technologies...and [we also] read about what provide us general knowledge... [such as articles] relating to personal development... and regional news. (Eco)

Finally, EEn believed that his subordinates needed reading skills in order to enhance their work quality and also, to be promoted. He noted:

Reading is essential, but my staffs don't seem to like reading at all, which I believe they need to improve. (EEn)

The second skill that received equal support from industry stakeholders was communication, specifically verbal and written communication. This included communication with customers, colleagues, and upper line managers. Seven out of twelve (58%) industry stakeholders (e.g., GCo, GPh, EBi, ECh, ECo, EEn, EPh) stated that graduate employees needed to learn

appropriate skills in their workplace. Both GCo and GPh noted that they needed communication skills for careers. GCo explained:

But I think the most important one should be speaking... because we need to communicate... so communication needs communication skills. (GCo)

Communication tasks, which were identified by five out of six employers (e.g., EBi, ECh, ECo, EEn, EPh), can be categorised into customer and colleague related. To respond to customers' questions relating to their company's services, EBi said he and his colleagues needed both spoken and written communication. He elaborated:

Meeting with foreign customers requires us [technical staff] to use English to communicate with them and respond to their questions relating to our department or program that we are currently working on. Due to the advancement of communication technology, we also communicate with them through the Internet tools such as email, Skype and so on. These tools are commonly used and also convenient... The topics for communication usually relate to animals' health and vaccination and so on. (EBi)

In addition, ECh and EEn's subordinates also needed to communicate not only with their foreign customers but also with upper ranking supervisors whose first language was not Khmer. They explained:

Regarding their [employees'] routine tasks, they need to communicate face-to-face with flight engineers [customers] in English. In addition, communication between topline management and bottom line employees and vice versa is normally through English because each section manager is a foreigner. The communication is through meetings, emailing, telephoning, but most of the time through emailing with both the customers and managers. (ECh)

The tasks that require English, first of all, is communication, because our staff need a lot of communication... Most of the time, we need speaking skills, so an English [ESP] course should focus on speaking skills... In other words, it's necessary for our employees to have a good knowledge in their work related tasks such as topics related to services provided to our customers... so we need communication skills. (EEn)

Similar to ECh and EEn subordinates' situation, EPh's subordinates also communicated in English with their non-Khmer colleagues. He explained:

Speaking is not only for academic studies and teaching purposes, but also for general communication... [Employees] need to communicate with their colleagues who don't speak Khmer... because normally we also need to communicate with the general public about general knowledge or work related topics. (EPh)

ECo's subordinates employed rather formal language when communicating through email but informal language through messenger. Thus, communication skills and writing skills were the third more preferred skills to include in an ESP course and awareness of formal and informal writing was raised as an important skill too. He noted:

When they [employees] work with their colleagues and customers, they need to communicate... so most of the time they communicate in English through tools such as Gmail, and messenger... another tool include video conferencing... Regarding the language use, email language is more formal than messenger's as communicating in the messenger is like daily informal chatting language. (ECo)

Thus, communication skills and writing skills were the third most preferred skills for industry stakeholders. The industry stakeholders' preference for communication skills contrasts with the quantitative findings, where speaking and business communication ranked seventh and

eighth in terms of importance among the eight ESP course content areas. Other writing tasks that required use of English were routine staff work, such as filling forms and reports. For example, ECh elaborated:

The routine tasks that they [employees] need to use English include filling out records and forms. Those records are for international auditors who cannot read in Khmer, so it's necessary to prepare and compile them in English for them. (ECh)

In discussing written communication skills, industry stakeholders highlighted the importance of two genres: reports and lesson plans. Specifically, EEn provided examples of report writing:

Regarding report writing, for example, a fire drill report consists of its objectives and benefits. So report writing is a necessary skill that also helps their [employees'] work. Meeting reports is also an important topic to help them discuss issues and solve them in teamwork. (EEn)

EPh discussed additional writing genres, ones that are especially applicable for teachers in international schools, such as lesson planning and lecture notes. He elaborated:

Tasks, which need English, include lesson planning, lecture notes, and hand-outs, so we [teachers] need to write and employ accurate grammar, appropriate vocabulary in order to produce a good piece of writing. In short, my lecture notes have been extracted from textbooks and other references. When extracting a sentence or paragraph for my writing, I don't just copy and paste but need to paraphrase it... Regarding using English in the teaching, writing needs to be 100% in English but speaking can be done in both Khmer and English because sometimes when we

[teaching staff] speak in English they [students] don't understand, so we need to explain in Khmer. (EPh)

In addition, GBi and GEn suggested that teaching writing should incorporate writing sub elements such as grammar and sentence structures in order to improve students' writing skills.

GEn explained:

First priority should be writing, which focuses on grammar... in order to write well we [students or writers] need to construct [appropriate] sentences, know how to use sentences, and objectives of our writing. (GEn)

All the six employers (e.g., ECh, ECo, EEn) (50% of industry stakeholders) agreed that the tasks that their employees performed in English should be incorporated into the ESP course. They believed that equipping students with the skills necessary to perform these tasks would enable them to perform better in their future jobs. ECh, ECo, and EEn elaborated:

It is necessary that we [university] incorporate these tasks [into the university program] in order to help them [students] get to know better about technical language [in English] when they study so that when they have a chance to work for an international company it would be convenient for them because they would already possess background knowledge. (ECh)

I think it's vital that the [ESP] program incorporates and encourages students to value communication skills, which can begin with an informal communication setting. We [employees] need to understand that effective communication needs an awareness of our interlocutors and what their wants are. (ECo)

The incorporation of these tasks are vital, plus the four macroskills: speaking, listening, writing, and reading. Obviously, at my workplace, skills of reading manual and procedure are necessary since most tasks are based on manuals and procedures.

(EEn)

In addition, three out of six (50%) employers (e.g., EBi, EMa, EPh) believed that the skills their employees needed, and the tasks the students performed when they became employees were not only beneficial for their current job, but were also necessary for students' academic studies. EBi, EMa, and EPh emphasised:

I think that these tasks are crucial for both academic studies and routine work.

Therefore, we [university] need to incorporate these tasks into the [ESP] program because when students can perform these tasks, it is convenient for them in both their studies and future career. (EBi)

In sum, if there are competent [ESP] lecturers specializing in English and research, the incorporation of these tasks into the [ESP] program would equip students with abilities and skills in research in English in addition to their research in Khmer. (EMa)

Should incorporate these tasks into the new [ESP] program, because technical reading with specialist terminologies normally differs from general daily interest readings. In addition, the translation [meaning] of the key words also normally confuses us [employees or students]. (EPh)

In summary, academic stakeholders reported that undergraduates' tasks involved mainly reading and research skills for assignments, whereas industry stakeholders highlighted the importance of oral communication skills to interact with customers and other non-native

speakers or colleagues and also written communication skills for completing forms and reports.

## **5.2 Participants' opinions about the importance of business communication in the ESP course**

In the quantitative phase, the Spearman's correlation score revealed that business communication was the least important among the ESP course content areas. However, in the qualitative phase reported here, it is interesting to note that, twenty-two out of thirty (73%) participants argued that business communication should be incorporated into the ESP course, whereas only eight out of thirty (23%) questioned this idea.

Those who approved of the incorporation of this unit into the ESP course mostly based their justification on its benefits, for the students in their future jobs. It is interesting to note that three out of six (50%) undergraduate students (e.g., UCo, UMa) and two out of six (33%) graduate employees (e.g., GEn, GPh) believed that business communication skills, such as writing formal letters or emails, could help undergraduate students get a job while they are studying and also upon their graduation. GPh, UCo and UMa maintained that effective communication between students and their prospective employers facilitated in getting a students to get the job and get promotions in their future careers. They noted:

... when students graduate from the university, they need to look for jobs. If they don't know how to [communicate effectively], it's hard for them to get a job and face unemployment. (GPh)

Some students might want to work while they are studying in year 3 or 4, so if they have good communication skills for business contexts such as writing formal letter, they would be able to get the job. (UCo)

I think it [business communication] should be incorporated [into the ESP course]... because when students finish their studies from the university, they need jobs. If they don't know how to use email, they would encounter difficulties. (UMa)

GCo and ECh explained that students would need this skill in the work setting. They specified:

I think it should be included because everyone [students] studies in order to get a job, and when they work they need such business communication skill. In fact, I am currently utilizing this skill such as email correspondence, writing reports...(GCo)

Overall, every [aspect of] communication is important, and students need to learn. (ECh)

GBi maintained that this skill could be included in the ESP course because students could be required to study six semesters of English. He also added that they needed that kind of skill in the workplace, in addition to acquiring technical language. Explicitly, he elaborated:

I think that it [business communication skill] should be included, because the duration that they [undergraduates] study English at the university [RUPP] is up to six semesters. Therefore, students should study many skills in addition to studying terminologies [for their specialisation]. (GBi)

Those who agreed on the importance and incorporation of business communication into the ESP course suggested a number of business communication tasks or genres. The tasks included work related communication through email, customer service and report writing skills. It was also suggested that this would not add unnecessary work for the ESP course.



Similar comments were given by industry stakeholders in 5.1.2. For example, ECh, EEn, EPh suggested:

...when we [staff] are working email communication is an important skill because the most convenient communication is through email... customer skills through verbal dialogue is also an important element for staff when dealing with customers... One more [skill] is report writing; it's also an important skill. (ECh)

Email or letter writing skills were essential. If we [staff] don't have these skills, we will encounter difficulties... because we don't know how to begin and conclude our writing. Even the skills can be acquired in a short period of time, every student needs to know while studying so that it will be convenient for them when they work... so far, communication skills is emphasised in many school, but is not specific, namely general daily communication such as small talks. (EEn)

Overall [business] skills to be included should be email communication... and skills relating to meeting. (EPh)

For the participants (e.g., EBi, ECo, GEn, GMa, EnL1, EnL4, EnL5, LEn) who questioned the idea of incorporating business communication skills in the ESP course, most argued that this content area was not a priority and was difficult to fit it into the existing undergraduate student curriculum. For example, EnL1 argued that the English language program might not be able to cover this content area due to time constraints and its focus on other prioritised skills. She commented:

I think students should learn this skill by them... we can't include [it] in our curriculum because there are too many skills [already], so we cannot cover all. It's too

much because we have limitation of our... I meant time. We cannot include everything into our [English] program [curriculum]. (EnL1)

GMa argued that business communication skills were not as necessary as other academic skills, such as research skills and technical language use. Interestingly, EnL4, who had taught the business communication course in the RUPP Summer School Program, commented that students who wanted to improve their business communication skills could enrol in her class.

LEn and EBi also questioned how it fitted into the undergraduate students' current curriculum and offered suggestions on how students could acquire the skills. EBi elaborated:

Personally, I think we should incorporate these skills [tasks] into the university [ESP] program, but obviously the duration of academic studies as well as in class period is short. Therefore, if we incorporate this skill [business communication] into the academic program, I'm afraid there wouldn't be enough time for study it in details. But, we'd better incorporate this skill into the [university] short course such as Summer Course. (EBi)

In summary, the majority of the interview participants argued that business communication skills should be included in the ESP course because students would eventually need the skills for seeking part-time jobs and also utilise these skills in their future careers. They pointed out email communication, customer negotiation skills and reports writing were essential in performing job related tasks. However, eight of the participants questioned this idea based on time, practicality and the fact that they did not think it should be prioritised in the ESP course. Therefore, the ESP course designer needs to consider the timeframe for the ESP course within the actual undergraduate curriculum.

### **5.3 Participants' perceptions about the objectives of the Faculty ESP course**

In the quantitative phase, 71% of the participants thought that an ESP course should be discipline specific, whereas only 26% believed that the course should be Faculty specific.

However, due to Faculty resources at Cambodian universities, the interview sought participants' suggestions about the course objectives if there were only one Faculty ESP course. There seemed to be a variety of objectives, based on their perceptions.

First, the ability to read and research was the first most preferred course objective: it was mentioned by 12 out of 30 (40%) participants (e.g., EBi, GCh, GEn, LEn, LPh, ECh, EEn, EMa, UPh, EnL1, EnL5, EnL6). They argued that students should be able to read critically and extensively, and undertake research using academic materials such as textbooks and articles, in the major subjects of their specialisation and future careers. This finding confirms the importance of reading to the participants in the ESP course.

In particular, reading and researching were believed to help undergraduate students to write better. A number of reading skills, such as reading strategies and speed-reading skills, were also suggested. Specifically, they noted:

At the end of the course, students should be able to read... and with good comprehension of reading materials such as textbooks and online articles. (GCh)

They [students] should have an ability to read and research in English for both textbooks and online. (GEn)

... [the course should] help students to read extensively, and have strategies for speed reading with good comprehension. (LEn)

...and students need to know how to research in order to broaden their studies. (LPh)

...[students should] be able to research... and research online documents. (EBi)

At the end of the course, students should be able to do research in English on their own. (ECh)

At the end of the course, students should be able to research... read. (EEn)

At the end of the course, students should be able to do research in English. (EMa)

...students should be able to comprehend their specialised articles or documents and improve their research tasks. (UPh)

... they [students] should be able to read and write in English...If they don't know how to read, how can they do assignments. (EnL1)

... they don't just believe in the information [they read], but should critically analyse and understand about what they have read, so reading skill is important. (EnL5)

Students [should] be able to do research in the subjects of [their specialisation] (EnL6)

In summary, building research skills, reading comprehension, reading academic articles, speed reading and critical reading were the most favoured ESP course objectives.

Eleven out of thirty (37%) participants (e.g., UEn, UBi, UCh, LPh, LCh, LEn, ECo, EMa, GCo, GPh, LEn6) highlighted that the technical language of the six specialisations should be taught, and teaching materials should be adapted from the six specialisations. Specifically, objectives should include the ability to comprehend and use technical vocabulary appropriately, to comprehend and to translate English to Khmer, and vice versa. Other

objectives were to gain competence in reading materials in their field of specialisation. They said in particular:

At the end of the course, students should be able to use technical vocabulary in English and translate from English to Khmer accurately, because this is necessary for their studies and future jobs. (UEn)

...undergraduate students have a good knowledge of technical language of their own specialisation in order that it is convenient for them to... comprehend [the lessons or articles] quickly...translation [of key term] is to be appropriate to the technical meaning. (UBi)

Students should be able to apply basic science terminologies in particular into their specialised subject matters. (UCh)

At the end of this [ESP] course, students should be able to apply English technical language into their specialisation appropriately. (LPh)

I think that the teaching materials should relate to the six [FoS] departments, meaning that... it should incorporate all the six [specialisation materials] together. (LCh)

...students should be able to utilise [technical] language, which he will learn from the course to apply in a variety of [real world] purposes. (ECo)

...be able to translate [technical words] from English to Khmer, and vice versa. (EMa)

...better comprehend technical terminologies... then they can better comprehend their major subjects [units]... (GCo)

...should teach as many technical terminologies as many as possible... and each term needs to be elaborately explained in both specialist and general meaning. (GPh)

...the teacher might teach them [students] related to their field [of specialisation]...key terms... (EnL6)

I think that students should possess effective reading skills and comprehend technical terms relating to their specialisation... to help them better understand the articles of their specialisation... Additionally, this helps students to read more and have techniques in reading faster and with better comprehension... (LEn)

However, nine out of thirty (30%) participants (e.g., EBi, ECh, ECo, EEn, UCo, UEn, LCo, LPh, EnL5) believed that general English skills, such as communication skills, should also be included. UCo argued that students should be equipped with general English skills in order that they be competent with all the four macroskills when they graduate from the undergraduate program. UEn suggested incorporating communication skills in addition to the language for his specialisation, into the ESP course. In addition, LCo proposed that an ESP course enable students to be proficient in the skills that the majority of students needed for both their studies and future jobs such as email and report writing, and presentation skills. He elaborated:

If we [course designers] have no choice [but to establish one ESP course for all the six FoS departments], we design lessons, focusing on the general needs of each department, because [students in] every department need [first of all] email writing. Second, [students in] each department expect to be able to write reports, do presentation... (LCo)

EBi, ECo, ECh and EEn similarly emphasised the importance of formal and informal communication, especially for the students in their future careers. Specifically, these skills included an ability to communicate with foreign customers, as well as friends or colleagues.

They stated:

...have the capacity to communicate with foreigners [foreign customers]. (EBi)

...and they [students should] be able to use English from the [ESP] course in their career, [for example] communicating with customers and foreigners. (ECh)

Overall, they [students] have to be able to communicate in English for their job and socially. (ECo)

...and [students should] have an ability to use technical English to communicate formally and informally. (EEn)

Interestingly, four out of thirty (13%) participants (e.g., EnL1, EnL3, LEn) argued that the ESP course should cover certain specific skills that fitted within the timeframe of the English program. EnL1 proposed a focus on the two most important skills: reading and writing. She justified this with the fact that students should be able to read in order to write their assignments. EnL3 also believed that the course might not be able to cover all four macro-skills, so he suggested that a course objective should be to enable students to become familiar with academic vocabulary and reading. LEn had a similar perception to EnL1 and EnL3. She suggested that the course equip students with the necessary reading skills and technical vocabulary in order that they be able to do research in their field of specialisation. She elaborated:

I think that students should possess effective reading skills and comprehend technical terms relating to their specialisation... to help them better understand the articles of their specialisation... Additionally, this helps students to read more and have techniques in reading faster and with better comprehension. (LEn)

In summary, several objectives of the Faculty ESP course were suggested by the respondents in the qualitative phase. The majority of them recommended that the course enable students to read and better comprehend, and use the technical terminology of their specialisation. In addition to providing students with technical knowledge of their specialisation, general English skills necessary for both their studies and future jobs, such as communication skills, email writing, report writing, and presentation skills, were also suggested. Despite communication skills not featuring in the qualitative results (see Section 4.3.9, Table 9, p. 119), a large number of participants advocated their importance in the ESP courses. Some of these communication skills had been taught in the university English programs, such as the Summer School Program. Therefore, ESP course designers may review the broad current English curriculum to reduce redundancy in the content of the courses.

#### **5.4 Participants' opinions about the status of the ESP course**

All the participants, with the exception of employers, were asked for their opinions about having the ESP course as an elective or compulsory course. A large majority of interview participants chose the option to have course an elective. This result aligns with the quantitative findings where more than 50% of the participants perceived that the course should be elective. Fourteen out of twenty four (58%) participants (e.g., UMa, UPh, GCo, LCo, EnL6) who believed the course should be elective similarly justified their choice based on students' personal preferences. In other words, students should be allowed to choose to learn what they thought is useful for them. It is interesting to note that six out of six (100%)



undergraduate students agreed with this. UMa argued that there might be other English elective courses (e.g., essay writing) that students believed would be more useful to them. If they were required to enrol in the ESP course, some of them would not be able to enrol in the other elective courses of their choice. She explained:

I think that this [ESP] subject should be an elective course. If the lecturers [English program] require students to study, but students don't want to study, it's hard for both students and lecturer. Meaning what students want to study can't be fulfilled, while what students don't want to study is required. (UMa)

In addition, UPh observed that most of the students preferred the ESP course to be elective. He elaborated:

I think it's a good idea because some students who might not want to study this course can choose to study other [English] courses that they prefer; for example, some of them might not want to become teachers... Based on my observation, most students don't want the [ESP] course to be compulsory. So, I agree with this idea. (UPh)

GCo and EnL6 also believed that students should be allowed to choose the course that helps them to address their weaknesses. They commented:

I agree with this idea, because students should be allowed to choose what they want to study in terms of what they lack. If they think that the [ESP] course is important for them, they would definitely enroll in this course. (GCo)

I also agree with this idea because students know themselves what they need and what they need to learn, so the new [ESP] course should be elective. If students prefer to learn which course, they will choose it. (EnL6)

Similarly, LCo strongly argued that students should have a choice of what they perceived was necessary for them. However, he commented that students should be well informed about the details of the ESP course offered so they could make a good choice. He elaborated:

If they [students] are forced to study [ESP] English courses, which they don't want to study, this seems to be putting a pressure on them. So what we [lecturers] are supposed to do is inform them about the benefits of the [ESP] course, the course objectives... what it can help them with their [future] job... Certainly, we [should] conduct an [ESP course] orientation for them. (LCo)

However, ten out of twenty four (42%) participants (e.g., GMa, GPh, LBi, LMa) maintained that the ESP course should be compulsory and justified their choice mainly based on the thinking that the course contributed to students' current studies and their future jobs, prospects and achievements, to pursue overseas studies, and to enhance the overall quality of the graduates. GPh and GMa commented on the importance of the ESP course for students' academic disciplines and future career opportunities. They explained:

I think that it should be compulsory for the students to study this [ESP] subject, because this course will help students in their research in English... If students do research documents in Khmer... many documents [in Khmer] have not been updated. (GPh)

I don't think it should be an elective course. I just want to emphasise that... students need to acquire technical terminology knowledge [in English]... Our country [Cambodia] will enter ASEAN economic integration in [2015], so if we [students] don't know English and technical vocabulary in English, the [job] market will be so small for them. (GMa)

LBi added that the ESP course would not only be necessary for students' current academic studies but also for those who pursued their studies overseas. In addition, LMa argued that the course would help enhance the quality of their education. He commented:

If we let them [students] choose [to enrol in the ESP course]... I believe that many of them would not want to study [these courses]. As a result, it affects the quality of the school, which wants them to be qualified after graduating... I think that this ESP course shouldn't be elective but integrated into the school's curriculum, because we [our school] care about quality [education]. (LMa)

In summary, the majority of participants in the qualitative phase supported the idea that the ESP course be elective. Those who supported the idea of having the course as an elective mainly believed that undergraduate students should have the right to choose elective courses that they thought would fulfil their needs and weaknesses. Conversely, those who were against this idea mostly justified their choice with reference to the course's contribution to students in their current studies and future jobs, as well as enhancing the quality of the students who would be graduating.

## **5.5 Participants' perceptions about the teaching methodology of the ESP course**

### ***5.5.1 Teaching methods and activities***

This interview question aimed to validate and explain the quantitative findings regarding the participants' opinions about the ESP course syllabus. The majority of the interview participants, especially English lecturers, suggested a teaching methodology that seemed similar to the one in the current general English program for the ESP course. Several other participants, who were not English lecturers, did not use the technical terminology often employed in language teaching and learning. However, their examples and the related

discussion helped infer their views on the language teaching methods they considered appropriate.

Eighteen out of thirty (60%) participants (e.g., UCh, UMa, LCh, LEn, EnL1, GCo, GPh, EPh) explicitly suggested that the teaching methods should be the same as the ones in the general English program. Examples referred to included lectures, group discussion, presentations, assignments, and homework. These activities were suggested in order to improve students' four macroskills: listening, reading, speaking, and writing. EnL1, LEn and UMa commented that the general English teaching methodology could be adopted for the ESP course. They provided some detail when saying:

I think English [ESP] lecturers may employ simple [teaching and learning] methods similar to the ones implemented in the general English courses, but [the content of the course] should be based on the specificity of students' specialisation, because it's not general English course. (EnL1)

I think that teaching methodology of the general English instruction consists of a variety of good teaching methods. If these methods could be employed in the new ESP course, I think it would be good because they've attracted students... (LEn)

Teaching methods should be the same as the ones of general English instructions... allow students to have a lot of practice such as communication [speaking and listening], writing... Teachers should have students practice after finishing each lesson. (UMa)

LBi, UCh, GCo, GPh, and EPh offered examples of a number of teaching and learning activities, such as pair work, group work, presentations, debates, and assignments. This

suggests they favoured communicative language teaching techniques and task-based approaches. In particular, they said:

We [teachers] have them [students] read and communicate with each other [pair work] and with teachers [whole class]... (LBi)

Regarding in-class activities there should be group discussion, teamwork tasks because students can share experiences and knowledge among their peers and teacher... (UCh)

In class activities could be presentation and debate. Presentation helps students to build their confidence. If there is debates, that would be good. Outside class activities are not crucial because English is not the main subject. (GCo)

Research-based work and project learning also featured as important tasks. Specifically, GPh and EPh elaborated by saying:

...Another teaching and learning method is to administer tests or quizzes frequently at least two times per week or after the end of each lesson. In addition, students should be assigned for homework, assignment or research topics as their additional academic research tasks. (GPh)

There should be a lot of assignments in English, which require students to do research in English. (EPh)

Twelve out of thirty (40%) participants (e.g., UPh, LCo, LMa, LPh, EnL6, GBi, GCh, GEn, GMa, EBi, EMa, EPh) explicitly recommended employing a student-centred method. LMa implicitly defined the student-centred method by describing a teaching and learning method

in which lecturers allow their students to participate actively through in-class activities. LCo added:

...student-centred method...encourages students to speak independently as much as possible through in class activities and interaction between students, students and teachers... (LCo)

UPh similarly believed that through the learner-centred method that students had a chance to share their ideas and this resulted in improvement of their long-term memory. LCo also claimed that this teaching method encouraged students to communicate more in the classroom. The activities associated with this method were such as group discussion, whole class questions and answers, and debates.

GEn justified her choice of the student-centred method because it involves students in their learning process and triggers their enthusiasm. Specifically, she elaborated:

I think that we [ESP lecturers] should employ a student-centred method, because this method... makes students interactive, and they are less bored. If lecturers speak alone all the time, it would make students feel bored... (GEn)

EnL6 argued that students would be able to learn more effectively if they were actively involved in their learning, and it was the lecturer's role to help students activate their potential. She also emphasised the importance of developing students' independent learning skills. Particularly, she commented:

...may apply student-centered rather than teacher-centered [approach]... I believe students can learn more by themselves better than [totally] depending on teachers...

teachers should require students to read [an assigned] book before coming to the class.

(EnL6)

In addition, GCh thought that students would be able to build their confidence and independence through application of the student-centred approach. She summarised this in the following.

In sum, teachers should employ a teaching methods based on the principles of a student-centered approach, for example, by letting students to participate actively in class activities, which help them feel comfortable and confident to ask and answer questions in the classroom. (GCh)

Interestingly, four out of thirty (13%) participants (e.g., LCo, GEn, EBi, ECh) suggested other specific teaching and learning activities, such as inviting guest speakers and incorporating field trip activities and reports. For example, LCo proposed inviting guest speakers, who specialised in a particular field to lecture in the ESP course so that students could learn and ask questions of the experts in the field. GEn also highlighted that if the university had funds for field trips, students should be allowed to have a field visit to workplaces such as companies or factories and then write reports in order that they be exposed to actual workplace environments and authentic tasks. This suggests that the participants wanted activities based on authentic, real-life examples. EBi explained:

If there is an invitation of guest speakers to lecture students relating to the guest speakers' specialisation or daily tasks and experiences, I think it would positively benefit a lot to students' studies and mind-set; in addition, they [students] obtain new concepts, which can make them study even harder and interested in their studies.

(EBi)

However, ECh questioned the practicality of implementing this initiative in terms of time constraints, although he believed it was a good idea. He indicated:

If there are guest or experience related speakers to do presentation relating to English required tasks at the actual workplace setting, it would be good, but it depends to whether they have time or not. (ECh)

In summary, the majority of the participants favoured a learner centred approach as the appropriate methodology for the ESP course. This would spark students' interest and build their confidence in their English language. Communication language techniques such as group work, discussions and research tasks were additional techniques for teaching the course. Finally, real life tasks, field trips and guest lectures were added as important classroom activities because they provided students with evidence and experience of employment opportunities.

### *5.5.2 Testing and assessment*

There was a range of assessment types proposed by the five groups of stakeholders. Twenty-seven out of thirty (90%) participants (e.g., LCo, LEn, LMa, LPh EnL2, EnL5, EnL6, EMa, ECh) preferred a mixture of traditional and innovative assessment types, and to include both formative and summative assessment. Using only one of them, it was reported, could not fully reflect students' real abilities and could be used to reflect their future career needs. LMa maintained that the traditional assessment, that is the end of course exam, and ongoing quizzes, did not reflect students' actual performance because some students may be able to cheat during the tests. Therefore, a more innovative type of assessment, such as participation in a group discussion, role-play or presentation, should be employed in addition to tests and



the final exam. LCo similarly argued that tests and quizzes did not adequately prepare students for the career challenges they would face. Specifically, he noted:

...written tests is just an addition, but they are not so necessary... because students may cheat through copying from their friends for MCQ (multiple choice questions)... we know that for MCQ, students can guess the answer...if students only do quizzes or tests, they only know about paperwork, but cannot communicate...So when graduating, they may fail at the interview stage... they cannot be promoted to a higher position... they cannot do presentation or debate. They don't have ideas... In fact, they may have something to share, but they cannot communicate their ideas, so they may just say no ideas... (LCo)

All six of the employers (e.g., EMa, ECh) suggested performance-based and authentic assessment, such as presentations or interviews, although they did not use these exact terms. This suggestion aligns with alternative assessment techniques promoted and discussed in ELT literature and widely used in language teaching around the modern world. They commented:

To test students' speaking and listening abilities, they should be tested through oral test or individual presentation... (EMa)

And secondly interview test... When they do the interview, we [teachers] would know their level of speaking and listening ability. (ECh)

LEn recommended an innovative assessment type (e.g., a mini research assignment) in addition to a presentation for inclusion in the ESP course, and she also was somewhat conservative about the traditional assessment. She believed that in language education quizzes could help students review what they had learned. She elaborated:

...in this [ESP] program, there should be a small research assignment for students...  
For testing and assessment methods, [teachers] cannot avoid having quizzes or tests;  
otherwise, students would forget the lessons learned. (LEn)

EnL2, ECh, LPh, EnL5 and EnL6 also proposed that more weight be given to formative over summative assessment, and emphasised the importance of formative assessment. They commented:

Assessment should be given more weight to on-going assessment such as quizzes, class participation, and presentation alternating from 60% to 70%... Final exam should only be 20 or 30% instead of 40%... in order that students can contribute more in the classroom activities... For example, when they [students] come to class to share ideas, they will get credit... We provide quizzes to identify students' strengths and weaknesses so that we can help them improve... (EnL2)

If we [teachers] give weight [to both formative and summative assessment] 50-50%, 40-60% or 60%-40%, students would have to participate in every activity in class, tests, and final exams. If they miss any [formative] assessment tasks, their score is low or fail, so it's a good strategy to have them participate in all assessment tasks. (ECh)

Final exam used to weigh 60% [of the total score], but currently weighs 40%... to encourage students to pay more attention in class activities or tasks... because there have been cheating cases during the examination or students might guess answers to MCQ questions, so teachers are not able to accurately evaluate individual student's actual capacity. (LMa)

...we cannot give a bigger percentage to the final exam, which takes only 1 hour and 30 minutes...students will not be involved much in class activities but they would just

try their best for the final exam... so increase the percentage to ongoing [formative] assessment... 60-40%... (EnL5)

For me, I prefer process to product assessment... teachers can give comments and guide [students] them to do a better work... if they just work for the final product... they would just submit the final product... teacher would only be able to assess their final product... If we talk about percentage of the process and product assessment, we can make 70-30%. (EnL6)

Two out of thirty (7%) participants (EnL1, LCo) valued innovative assessment and strongly criticised traditional assessment. EnL1 argued that traditional assessment, such as tests and final exams, was not necessary. She commented that students should be assessed through their performance. Examples of assessment types that she raised included presentations and written assignments, such as papers or critical essays, because students could use these to develop the four macro-skills – namely reading, writing, speaking, and listening literacy. In order to write their papers, give presentations, and answer questions from the audience they would use and practice the four skills. Specifically, she noted:

...we don't need final exam.. students need to read and write their assignment... I think mid-term and final exams are not important. We just need on-going assessment.  
(EnL1)

LCo criticised the traditional methods of assessment and proposed innovative assessment types, such as presentations, group discussions and ongoing assessment, because these nurture students creativity. He elaborated:

I think that this [traditional] assessment method should be changed as I have mentioned earlier that tests, such as midterm tests are not adequate [for students]

because... that does not respond to their actual needs. [For example,] when they [students] go for interviews, they [interviewers] need to ask [students] questions, and they [students] need to respond to the questions quickly. Then when they [students] work, they need to communicate or have meetings... so we [lecturers] can have them [students] do the presentation, group discussion and take notes... [Assessing] their [students] creativity... they can write [short] articles by themselves. (LCo12)

It is interesting to note that only one out of thirty participants (GBi) seemed to prefer traditional assessment. GBi claimed traditional assessment as the best methods of assessment for the ESP course as long as there was strict test administration, so there was prevention of restricted students' cheating. Specifically, she stated:

I think that we can have [a] midterm [test], quizzes, and [a] final [exam] as [the ones] in general English, but just strengthen the [test administration] rules or implement stricter rule enforcement during tests avoiding [students] cheating, copying from each other, or asking each other questions. Therefore, we [teachers] know who [students] possess actual capacity, who are outstanding, and who are not. If teachers strengthen the rules during tests, students will also study harder than before because they know they cannot cheat. Therefore, teachers can truly evaluate students' actual ability. (GBi)

One of the main reasons for the choice of assessment types indicated by GEn7 was her lack of assessment literacy. She said that she did not know much about assessment types in language teaching because she had not been trained in language assessment, so she only mentioned the methods that she had encountered in her English classes. She commented:

For this [assessment types] question, I don't think I have any opinions on that. As far as I know, students can be assessed through tests, quizzes, a final exam, attendances, class participation, and homework. (GEn)

In summary, the majority of the interview participants preferred a combination of traditional and innovative assessments. A few participants also emphasised the importance of examination rule enforcement so that the results reflected students' true scores and achievement. The interview participants who were exposed to innovative assessment, particularly lecturers tended to favour innovative assessment and criticise traditional assessment. One of the main reasons for their preference for innovative assessment was that it better measured students' competence, developed learner autonomy and reflected their potential capacity to perform at jobs. Participants' preference for a combination of innovative and traditional assessment aligns with their preference for the communicative teaching methodology discussed in the previous subsection (5.5). That is, innovative or alternative assessment incorporates performance-based marking criteria, which is a component in CLT (Jacobs & Farrell, 2003).

### **5.6 Participants' perceptions regarding the challenges and the measures needed to assist in ESP course design**

The first four groups of stakeholders (with the exception of employers) were asked to elaborate on the challenges they perceived would be faced in developing the ESP course, and any measures they thought would help to deal with these challenges. This section is divided into two subsections. 5.7.1 describes participant perceptions about the challenges they anticipated for those involved in the ESP course design, and 5.7.2 shows the measures they suggested would be helpful in solving the challenging issues.

### *5.6.1 Challenges*

Twenty-three out of twenty-four (96%) participants believed that having general English teachers teach the ESP course was one of the main challenges, and this featured in the findings of the quantitative questionnaire also. English lecturers were perceived to possess limited knowledge in the fields of science and this was necessary to teach science to undergraduate students. Interestingly, all the interviewed English lecturers (e.g., EnL3, EnL6) acknowledged that they would not feel confident to teaching such a course. For example, EnL3 and EnL6 admitted:

Let's say... I'm supposed to teach English for Mathematics. I myself don't have a broad knowledge of mathematics... Maybe I can just teach but not so productively...

A few lecturers [I know] have admitted to possessing less knowledge than the students... They have no ideas to share with the students. (EnL3)

I may find it difficult to understand the content knowledge of students' specialisation, because [English] teachers [including me] have no background or have only a little knowledge about students' majors... (EnL6)

Another reported reason why this was a challenge, from two out of six English lecturers, was that English lecturers had little interest in teaching the ESP course because they would be expected to perform new and challenging tasks in the course. In other words, they expressed an unwillingness to leave their comfort zones. For example, EnL3 noted that English lecturers would not be motivated, since they would probably get the same hourly rates of pay as those of the General English course, and these he perceived would have fewer preparation tasks. EnL1 similarly felt that English lecturers would not be willing to invest their time in their busy teaching schedules to develop teaching materials for the ESP course. She commented:

My concern probably is, first of all, hard to find [ESP] teachers to teach the [ESP] course because most of our teachers prefer to teach general English [courses] rather than the specific ones... They need to spend more time to develop [ESP] textbooks, materials, and they also have to think about how to teach the [ESP] course. It's not as easy as teaching the General English as we have all the textbooks, and [teacher's books]... so we just copy and then we can go to the classroom and teach... (EnL1)

Another challenge anticipated by four out of twenty-four (17%) participants (e.g., UCo, EnL6) was students' low English proficiency that needed to be handled. They elaborated:

I think that if students with low English proficiency try to learn English in the ESP course, they wouldn't learn much, because their English background is too low. We need to build their basic English skills to a certain level so that they can attend the course. (UCo)

Students would have two challenges: English skills and the knowledge of their specialisation... they may need to take one or two courses of [general] English in order to improve their English skill so as to be able to read or communicate. (EnL6)

However, four out of twenty-four (17%) participants (e.g., UCh, LCh, LPh) argued that this issue was not a big challenge. UCh believed that science students could handle the ESP course because the schema of their specialisation could facilitate their learning of the course. LCh also claimed that the general English proficiency of science students would not be an issue for them, although she raised her concern for those who had very low English proficiency. She explained:

For students, the [ESP] course seem new to them [students], but they will be able to handle the course because they have already possessed science knowledge, which enables them to understand the science concepts quickly. (LCh)

In addition, LPh argued that with appropriate teaching methods, low English proficiency students should be able to attend the ESP classes. He commented:

Regarding students with low English proficiency who want to attend [ESP course], I think that it depends on the teaching methods that teachers apply. Students with low proficiency can also quickly acquire the knowledge and want to continue the [ESP] course. (LPh)

Although the majority of the participants did not raise teaching materials as a problem for the ESP course, four out of twenty-four (17%) participants (UBi, GEn, EnL2, EL1) foresaw that teaching material or textbook development would be one of the major challenges. UBi raised his concern that English lecturers might not know what teaching materials science undergraduate students needed unless the subject lecturers were consulted. GEn also questioned whether the textbook development resource staff of the university could compile ESP textbooks or even simply adopt available commercial textbooks. Similarly, EnL2 wondered whether the ESP textbooks would interest students and be used to respond to their needs appropriately. EnL1 remarked about the lack of teaching materials for the ESP course, since the Cambodian context and content related ESP textbooks were not widely available. Specifically, she cautioned:

And also [teaching] materials that we are going to use... I know a lot of textbooks that have been published targeting students in developed countries [e.g., Britain, U.S., Australian]. Of course, we [teachers] can find textbooks like English for Science,



English for Mathematics, or English for Biology. If we use these kinds of textbooks, there's no problem because they have been developed already, and they consist of activities that we can adapt, but I'm afraid that these textbooks are probably not enough, or not something that each individual department needs, so teaching materials are also hard to choose. (EnL1)

This suggests that careful consideration of this matter and consultation between Science and English faculties needs to take place.

Another challenge, one raised by only one out of twenty-four participants, was the lack of teaching facilities. LCo emphasised that there should be language labs for students in order to facilitate the learning and teaching, especially through visual learning and teaching. He noted:

Teachers are just drivers, but driving [teaching] depends on the car [teaching facility], too. Let's say, we [teachers] teach technical language relating to a technical item, but we don't have the item to demonstrate. It is like a dream when there is no visual learning [and teaching]. Normally, we [students] learn through seeing... this is a problem because we don't have enough facilities... (LCo)

The final challenge, which was that the students' current learning schedule might not be able to accommodate the new ESP course, was noted by only one participant. LEn commented that years one to three undergraduate students already had full learning schedules during the weekdays, so adding extra ESP classes would be a significant challenge for them. This issue might affect the undergraduate students' existing academic timetable at many Cambodian universities that have only a few semesters allocated for English language instruction. She remarked:

Another concern is related to the [ESP course] schedule, which would need to be included into the students' timetable. When should they learn [the ESP course]? When another subject [ESP course] is inserted, the other subject learning hours might need to be cut down, because currently from Monday to Friday, the timetable for years 1 to 3 does not have extra empty schedules. (LEn)

To summarise, the interview participants elaborated several challenges. The most frequently cited was the English lecturers with little background knowledge of students' specialisation. Another major concern was students with low English proficiency. Teaching materials was also featured as a challenge, and teaching facilities in designing an ESP course was also noted. Another concern that was raised in the qualitative phase was how to incorporate the prospective ESP course into the students' current tight timetable. The next section discusses participants' suggestions for addressing these challenges.

### *5.6.2 Measures to resolve the challenges*

The interview participants (with the exception of employers) who raised possible challenges in developing a ESP course, were also asked to offer solutions for these challenges.

A number of measures were proposed to deal with the challenge of general English lecturers teaching the ESP course. First, 20 out of 24 (83%) participants believed that general English lecturers could be qualified as ESP lecturers if they were provided with support and technical training, and were willing or motivated to teach the ESP course. Fourteen of them (e.g., GBi, LCh, GCo, GPh) noted that English lecturers should be properly trained prior to teaching the ESP course. They argued that the training content should at least contain technical language for the ESP course as an important aspect of ESP course teaching and learning. For example, UCh LCh, LCo, GBi, GCo and GPh commented:

If an English lecturer had little knowledge relating to science majors, it would be good because he or she had a full potential capacity to teach ESP course to science students. (UCh)

There should be a training course for English lecturers who would teach ESP course... prior to teaching ESP course... Training should be related to English for science. (LCh)

If subject lecturers could offer a short course to general English lecturers, they would be equipped with basic knowledge [of science]. (LCo)

If there is training for general English [ESP] lecturers, I think it is also an effective measure in order to help them learn technical language relating to each science department prior to their teaching [ESP course]... In sum, I mean that general English lecturers should acquire as many technical language of each department as possible through additional training and subject lecturers. (GBi)

There should be training for them [English teachers], and we [program coordinator] have to make sure that these teachers know the technical language clearly, before allowing them to teach the ESP course. (GCo)

I think that ESP lecturers should be English lecturers who have obtained training relating to sciences, so technical language use is accurate. (GPh)

Regarding training for new ESP lecturers, five out of twenty-four (21%) participants (LCo, LPh, GBi, GMa, GPh) on how general English lecturers should be trained. They advised that general English lecturers should be trained by subject lecturers or experts in ESP teaching. LCo perceived that by so doing, English lecturers would be able to widen their knowledge of

their ESP students' specialisations. LPh and GBi also noted that training could be conducted by subject lecturers. They elaborated:

... they [ESP lecturers] may seek help and feedback from subject lecturers either through training or workshop by informing subject lecturers well ahead, so that they can prepare appropriate materials on time. (LPh)

If there is training for the general English lecturers [to teach ESP course], I think it's a very good solution in order to help them become familiar with scientific concepts of each [Science] department prior to their teaching. In addition, they should consult subject specific lecturers. In short, I mean that general English lecturers should broaden their knowledge of each [science] department through training and consultation with subject specific lecturers. (GBi)

GMa and GPh similarly proposed that subject lecturers should organise in-house workshops to train general English lecturers so that they would be better able to understand the concepts of each of the six science departments. GPh specified:

Regarding English lecturers teaching the ESP course, there should be a prior training offered by subject lecturers relating to science. (GPh)

Second, 12 out of 24 (50%) participants (e.g., GBi, GCh, GEn, LEn, LMa, UMa, UPh) suggested that general English lecturers collaborate with the subject lecturers in the design and development of the course. UBi, GBi, GCh, GEn, and LEn recommended that both general English and subject lecturers jointly compile teaching materials and decide on teaching methods for the ESP course. In addition, LMa believed that both sides could work well together. Specifically, he argued:

I think that at the Royal University of Phnom Penh, if both sides [general English and subject lecturers] have enough office hours, they can work together. I think that it's not very difficult for a good cooperation between the English lecturers and subject lecturers for the sake of effective [ESP] teaching. This [ESP] program is to be set up for [undergraduate] students, so... I think that cooperation between both sides is a good idea in order to help them [ESP lecturers] to teach effectively and respond to students' needs particularly relevance to their [students] specialisation. (LMa)

However, five out of twenty-four participants (LCh, LCo, LEn, EnL1, EnL2) had a negative attitude towards any collaboration between the general English and subject lecturers. LCh, LCo, and EnL1 questioned the effectiveness of such collaboration. LCh, LEn and EnL1 claimed that the discussion would not be very fruitful because both sides may be busy with their teaching commitments. EnL2 also argued that in the current context both sides had different viewpoints based on their teaching background. If they had time to see each other, LCo highlighted that there should be facilitators to make the meeting efficient and effective. Specifically, he commented:

I think that in Cambodia, we [lecturers] don't have a very cooperative spirit. There doesn't seem to be a very compatible cooperation between two groups of people from different specialisations, so there should be a facilitator whenever there is a meeting of the two specialised groups of lecturers so that they know what to discuss... The facilitator should set clear goal for each meeting. (LCo)

Another suggestion offered by interviewees was cooperation between teachers and students. In particular, thirteen out of twenty four (54%) participants (e.g., LCh, LCo, UCh, UMa, UPh) put faith in this proposal. Both LCh and LCo believed that this practice would be more effective than collaboration between general English and subject lecturers because English

lecturers would have more contact hours with their students in the ESP class than with the subject lecturers, and they would be more willing to share their knowledge with their ESP lecturers. LCh noted:

Collaborative teaching and learning between ESP lecturers and students is applicable because students have a lot of contact hours with their lecturers... (LCh)

Interestingly, EnL1 raised the example of a successful practice in the Biology Department at the research university, where outstanding students had been chosen to work with their lecturers, and she would encourage this practice in the English language program. She added that the undergraduate students assisted English lecturers in describing the technical concepts of their specialisation. Similarly, UCh, UMa and UPh also believed that the undergraduate students would be more than happy to share their knowledge if their ESP lecturers were open to students' ideas. Specifically, UCh, UMa and GPh elaborated:

I think that this [practice] is applicable because [English] lecturers and students have close relationship with each other... Students can learn English from their teachers, and teachers also can learn [technical concepts] from the students... (UCh)

I think that it would be very effective when ESP students have good relationship and cooperation with their ESP lecturers. (UMa)

I think this measure is effective because both [ESP] lecturer and students can exchange knowledge... the lecturer can help the students and he or she can gain additional knowledge from them. (GPh)

However, this measure also received criticism from ten out of twenty four (42%) participants (e.g., UBi, GBi, LCo, LMa). UBi was concerned that this practice might be a challenge for

students since many of them get used to the culture of being spoon-fed from the lecturers. In other words, they might have little idea how to transfer their knowledge to the lecturers.

Specifically, he admitted:

It would be difficult... because students are used to only receiving knowledge from teachers, so if they need to transfer knowledge back to the teachers, they don't know how to offer theirs to the teachers... (UBi)

In addition, both LMa and LCo questioned the knowledge of the undergraduate students.

They expressed their concerns that the undergraduate students might not clearly understand the concepts of their specialisation because of their lack of experience and limited knowledge of the field. LCo commented:

Undergraduate students are lacking of [working] experience. They have learned the skills, but haven't applied them in work... their [competency] levels might be not up to acceptable standard. (LCo)

GBi also had a concern that some general English lecturers, because of their proud nature, would not accept ideas from the undergraduate students. He commented:

But as far as I know, there have been a number of difficulties relating to the cooperation since each side don't want to accept ideas from each other because of their personal proud nature. So, English [ESP] lecturers should open their mind to receive knowledge from students in order to achieve a successful cooperation. (GBi)

Fourth, 11 out of 24 (46%) participants (e.g., UCh, UPh, LBi, LCo, EnL1, GBi, GPh) felt that subject lecturers with good English skills could teach the ESP course.

...for subject lecturers, it only requires them to know English; then they would be able to teach [ESP course]... (GPh)

LBi and LCo argued that subject lecturers could teach the ESP course more effectively than general English lecturers, although he admitted that those subject lecturers needed to possess a certain level of general English proficiency.

...for example, Environmental Science lecturers, who know English can teach the ESP course. (LBi)

To me, if a lecturer possesses skills [and knowledge] of the computer science, they can teach English for computer science... (LCo)

Similar to LBi and LCo, EnL1 wanted to encourage subject lecturers who held a degree in English teaching to become ESP lecturers. GBi similarly proposed that lecturers teach the ESP course, since they both possessed the necessary technical knowledge and were better aware of what technical language the science students needed. UPh also seemed to prefer subject lecturers to general English lecturers for teaching the ESP course, although he did not properly specify what general English proficiency level a qualified ESP lecturer should possess. He argued:

I think that it's probably hard for [general] English lecturers to teach English for my specialised field... But subject specific lecturers can teach us [undergraduate students] better because they possess better relevant knowledge [than English lecturers] such as technical vocabulary. If English lecturers teach us, they might find it difficult. For example, they may find it hard to explain the students [technical concepts], which make students confused. (UPh)



However, LCo acknowledged that in the Cambodian context the number of lecturers who were qualified in both general English and science was limited. He commented:

...but there is a limited number of these kinds of teachers who have technical knowledge and high proficiency of English. (LCo)

This measure would need to be considered seriously by the university administration and identify solutions for the individual university concerned.

Fifth, four out of six (67%) English lecturers (EnL1, EnL2, EnL3, EnL4) argued that the new ESP course-teaching role should be made compulsory for teachers. EnL1 insisted that general English lecturers should be encouraged to jump out of their comfort zone by teaching the new ESP course. She added that ESP teaching rotation could be made compulsory for all the general English lecturers, so that all lecturers could be involved in the teaching of ESP. She commented:

It also depends on the school [RUPP] policy. If the school wants to have a ESP course, they [policy makers] need to make this task [ESP course teaching] compulsory for [English] lecturers. Therefore, teachers need to take turn to teach [the ESP course] rather than teaching General English all the time. Probably, we need to make sure everyone [teachers] realises that they are not supposed to teach the same courses all the time. It's compulsory from the school... So we need to do something like that, and probably we need to encourage teachers to try something new. (EnL1)

EnL2, EnL3, and EnL4 also raised and supported the ideas of teaching in rotation. In addition, they were willing to teach the new ESP course if they could obtain support from the relevant stakeholders (e.g., the management team and subject lecturers), or they were familiar with the subject matter. For example, EnL3 shared his concern, “when I have questions relating to

teaching materials, whom should I approach?” EnL4 also commented that she would be happy to teach ESP subjects that she felt confident about. She remarked:

If I were asked to teach English for Biology, I couldn't... If I were asked to teach English for Computer science, I have to read more... I am familiar with social issues, so I would be happy to teach English for Social Work. (EnL4)

Another interesting measure raised by only one out of twenty-four (4%) participants (EnL4) was that of ESP lecturer recruitment. She proposed recruiting new ESP lecturers who would be qualified to teach the ESP course. She argued:

There are a lot of young graduates who possess a dual degree, so recruit them to be ESP teachers. (EnL4)

The participants' views as presented here varied in the solutions they suggested for resolving the issue of English lecturers' specialist knowledge. The relevant dean or manager would need to be involved in this task.

With regards to how to deal with the undergraduate students' low entry level general English proficiency of undergraduate students, several measures were proposed by the interview participants.

First, eight out of twenty-four (33%) participants (e.g., UEn, UBi, LCh, UCh) argued that students with low general English proficiency should be placed based on their placement test results, and should develop their general English proficiency through the university General English Program, before they might be ready for the ESP course. Specifically, they remarked:

I think that the school [RUPP] should be responsible for placing the students in the right levels. In other words, it should organise students based on their [placement] results... (UEn)

For students who have low English proficiency, first, they should be required to enrol in the school's [RUPP] General English Program in order that they would improve their English proficiency. Within one year, I believe the students would possess an acceptable English proficiency... So, in year 2, they can study in the ESP course... and they would be able to better comprehend their English and specialisation. (UBi)

I think that lecturers should encourage their students to enroll in the General English Program in order that they, first of all, possess a proper English proficiency before they can be enrolled in the ESP course. (LCh)

The solution is to place them in General English classes before allowing them to enrol in the ESP course. However, the English supplementary course may reduce the duration for the study of the ESP course; it's better than allowing them to enrol in the [ESP] course, which might be useless. Even though they learn in the ESP course for a short period of time... or [the students] might gain nothing from [the ESP course] if they enrol from the beginning. (UCh)

Second, eight out of twenty-four (33%) participants (e.g., UCo, UEn, UPh) suggested that low English proficiency students have additional support, reach an accepted level to be able to enrol in the ESP course. UCo and UEn advised that students with low English proficiency should attend additional English programs provided by the university. He elaborated:

They [low English proficiency students] need to build their Basic English proficiency until they possess proper general proficiency to study in the ESP course through the

university [English language] programs such as Summer School. Besides, some students may enrol in affordable English private classes if they want to build up their [general] English ability. (UCo)

UPh was convinced that students with low English proficiency could attend the ESP course if they got extra support from the university. In other words, the university could offer intensive programs, such as summer courses, to assist students who wanted to attend the ESP course.

He commented:

I think the majority of students would like to study in the ESP course, but they might not be qualified [low general English proficiency]... Unless we [RUPP] add additional classes for those students so that they have the proper level to be able to enrol into the course. (UPh)

Interestingly, EnL1 revealed that the university had already been planning to help low English proficiency students to reach the same level as their high English proficiency counterparts through the university's supplementary English support program. Adding supplementary programs would be available to those students interested in the ESP course, and it would not translate into losing courses in their specialisation. She elaborated:

The vice Rector responsible for academic affairs informed me in the meeting that we are going to push students' English proficiency. We have had a plan to push the students who have low English proficiency... in order to catch up with the other students... (EnL1)

Third, only one out of twenty four (4%) participants (EnL4) suggested a possible measure to address this problem by mixing the low English proficiency students with other students with a higher level of English proficiency in the ESP course. EnL4 maintained that the students

with high English proficiency could help the ones with low English proficiency if they studied together.

Although not many participants commented on teaching materials, seven out of twenty four (29%) participants (e.g., UBi, UCh, EnL1, EnL5, GEn) contributed their ideas in this regard. For example, UBi proposed that ESP lecturers consult technical documents and get feedback from subject lecturers. UCh suggested something similar, that teaching materials should be compiled based on concepts from the six FoS departments so that they would be more relevant to students in terms of context and needs. GEn also argued that compiled ESP textbooks or teaching materials better suited students' needs in terms of context and topic relevance. Specifically, she commented:

To me, if teaching materials were to be compiled on our own (university side) that would be better [than adopting commercial textbooks]. This can be relevant in terms of topics as well as our country [Cambodia] context. If we [curriculum team] entirely adopted [a textbook], it would be hard for the students to understand, because it doesn't relate to our society... In addition, students might not be so interested in reading these kinds of materials. If the teaching materials were properly compiled, it would additionally attract students. (GEn)

EnL1 and EnL5, nonetheless, seemed to prefer ready-made commercial textbooks. They explained that this was due to time constraints and lack of human resources for teaching material development; for these reasons English lecturers might prefer commercial textbooks over locally compiled textbooks. In other words, the preference expressed was for the commercial textbooks, which consisted of a set of teaching materials including a student's book, ready-made teaching activities, and a teacher's manual. However, most participants agreed that tailored materials would work better in the Cambodian context.

In summary, to address the limited knowledge of English lecturers, the majority of participants thought appropriate training or workshops were advisable to assist the ESP lecturers. Another measure suggested was to organise co-operation between the English and subject lecturers; however, several interview participants questioned this measure mainly because of the busy teaching commitments of both. A number of interview participants suggested that students who want to enrol in the ESP course should improve their overall English proficiency through university English training programs or affordable private English programs. Regarding teaching materials for the course, while a minority of participants in the interviews preferred teacher-made materials, a few English lecturers preferred commercial textbooks as the ESP course teaching materials. Several interview participants questioned whether the commercial textbooks would be appropriate to students' needs and relate to their contexts. These measures could throw into relief the major challenges faced by a Cambodian HEI.

### **5.7 Summary: Integration of the quantitative and qualitative findings**

This section summarises and integrates the main findings from the quantitative and qualitative phases with regards to participants' thinking about the priority ranking of skills to be the ESP course. The quantitative findings revealed the order of importance of the eight ESP content areas based on the correlation coefficient scores, namely cross cultural awareness, writing, vocabulary, reading, grammar, listening, speaking and business communication were slightly different. With the highest coefficient score, cross-cultural awareness was the first priority for the ESP course. Writing was the next relevant skill for undergraduate students to learn as a means of helping them with both their academic studies and future careers. In addition, based on the correlation coefficient score, the other three macroskills, reading, listening, and speaking were prioritised in this order.

However, in the qualitative phase, the majority of participants, both academic and industry stakeholders, argued that the traditional and typical English language skills of reading and writing should be central to the ESP course. Specifically, reading was ranked the most important skill for undergraduate students' academic studies and future careers. Reading tasks were important because reading was used for conducting research, professional development and for reading technical articles and reading for information which are mainly written in English. Reading tasks in many real work settings according to the industry participants, and included being able to read and perform routine tasks, such as reading for filling out forms, and reading reports and policy documents. Self and professional development were also indicated by the industry stakeholders as requiring intensive reading in the field and intensive reading on general topics. Writing was another skill considered relevant for teaching the undergraduate students, and an ESP course should include it and cover formal writing genres, such as reports, email, and lecture notes, to informal writing genres, including short messages, and writing via a number of technological tools, such as messenger and email. Based on industry stakeholder group, communication were the most important topics because they need to communicate with both their clients and colleagues on job related topics. The communication tasks included both written and mainly emails and spoken tasks, such as dealing with customer inquiries through face-to-face, Skype and video conferencing. Listening skills are also considered equally important and part of business communication skills.

Although a number of academic stakeholders seemed to favour learning tasks relating to undergraduate students' academic studies, the majority of industry stakeholders argued that job related tasks should also be incorporated into the ESP course, as to do so would equip undergraduate students with work related skills and they could perform the requested workplace tasks conveniently and appropriately. That is, students, and later as employees,

they would communicate with both their clients and colleagues on job related topics. The communication tasks that received major support from stakeholders included both written and spoken tasks, such as reports, face-to-face, Skype and video conferencing. Listening skills were also considered important and an essential part of business communication skills.

In the quantitative phase, business communication ranked last among the eight ESP course content areas based on lowest correlation coefficient score results. This low score could mean that respondents were thinking that, while business communication may assist students with their future careers, it is less likely that the topic is applicable to students' academic studies. Another possible reason for the low correlation score on business communication could be because a number of the skills included in this content area overlap with other communication skills as mentioned in the previous paragraph. The overlapping skills include formal and informal workplace communications with customers and colleagues through face-to-face interaction and emails, and language for presentations and report writing. Other perceived business communication topics mentioned included writing minutes of a meeting, differences in formal and informal language, business letters and email writing. However, the interview participants who believed business communication skills should be incorporated into the ESP course outnumbered by those who did not. Thus business communication skills received high support and need to be considered for a place in the course in conjunction with speaking and writing skills when designing the syllabus.

Regarding the preferred specificity of the ESP course, while up to 71% of the quantitative participants argued that the course should be based on each individual undergraduate student's specialisation or be a discipline specific course, 26% of them believed that the course should involve a mixture of undergraduate students from different specialisations, or even be a faculty ESP course. Interestingly, only 3% of them noted that the course should be a



combination of both. Purely discipline specific courses may be too small and may not be viable in terms of different class sizes in the Cambodian context.

Due to the limited resources in Cambodia, the interview participants were requested to suggest ESP course objectives for the faculty ESP course if it were pursued to reality. Responses to this question also facilitated the validity of the findings about the preferred ESP course content areas. From the responses it was evident that the majority of interview participants believed that the course should equip students with academic and workplace skills that it would be applicable to all six science specialisations. These objectives included the ability to comprehend technical terminology and academic texts, undertake research and communicate, as well as give presentations in the science fields.

In the quantitative phase, a large number of participants believed that enrolment for an ESP course would be high; however, many of them argued that the course should be elective. Therefore, the interview participants were asked for their opinion on whether the course should be elective or compulsory. Interestingly, a similarly high number of interview participants to the quantitative phase argued that the course should be elective. Those who supported the idea of having the ESP course an elective mainly believed that undergraduate students should have the right to choose the ESP as well as other elective courses that they thought would fulfil their needs and address weaknesses. There were those who were against this idea: they mostly justified their choice based on the course's contribution to helping undergraduate students with their current studies and future careers, as well as enhancing the quality of the employability of undergraduate students upon their graduation.

Regarding the preferred syllabus for the ESP course, the majority of the participants responding in the quantitative phase were highly in favour of a skills-based syllabus. Also, about half of them equally preferred competency-based and task-based syllabi. To explore

these preferences in more detail, the participants were asked in the interview about a number of teaching and learning methods and activities. The most mentioned method followed the principles of a learner centred approach. In other words, most of the interview participants argued that ESP lecturers should involve their students in activities in the ESP classes. They recommended teaching and learning activities be extracted from the general English program, particularly those that were based on the principles of a learner centred approach, and engage students in classroom tasks. Such activities included pair work, group discussion, presentations, debate and projects. Additionally, participants suggested the use of real life tasks in both academic and workplace settings to trigger students' motivation and enhance independent learning skills. The tasks included written assignments, field trip reports, emails, presentations and communication with customers.

The ESP course syllabus could also be reflected in the assessment items included in the course. The majority of the quantitative responses emphasised alternative assessment approaches over traditional assessment types like quizzes and final exams. The examples of alternative assessment types that received high scores were presentations and written assignments, whereas the preferred traditional assessment types included the final exam, quizzes, and midterm tests. This, perhaps, reflects the reality of the current practice of assessment at universities in Cambodia. Interestingly, most interview participants argued that the traditional assessment alone would not be able to demonstrate students' actual ability and not fully reflect potential performance in their future jobs. They suggested that both alternative and traditional assessment should be integrated in the ESP course. This preference for assessment types aligned with details of the preferred ESP course syllabus.

Challenges in developing an ESP course were identified in both phases. In the quantitative phase, participants featured several challenges, including English lecturers with little

specialist knowledge, undergraduate students with low English proficiency, students with mixed English ability, limited teaching facilities and lack of teaching materials. In the qualitative phase, one participant added another challenge how the prospective ESP course could be integrated into the students' current tight schedule. Also, it is interesting to note that all the interviewed English lecturers admitted that they felt reluctant to teach the new ESP course because they were not familiar with the science undergraduate students' specialisations.

Measures to solve the challenges set out above were identified in both phases. In the quantitative phase, the participants favoured several measures, including collaboration between English and subject lecturers, collaborative learning and teaching between teacher and students, the development of training for ESP teachers. In the qualitative phase, collaboration between English and subject lecturers was the most preferred measure by most participants. In particular, a great number of these participants suggested that both sides could work together to design teaching materials. English lecturers should also consult subject lecturers about teaching materials. Interestingly, many qualitative participants suggested that subject lecturers who possessed high English proficiency could teach the course. However, they acknowledged that lecturers who possessed both science and English teaching majors were not commonly available. In fact, they are a very scarce resource.

Discussing measures to deal with students who possess low English proficiency, the interview participants acknowledged that many undergraduate students originated from the provinces; and therefore, they should be provided with extra assistance in improving their English ability. Simultaneously, the highest number of respondents in the quantitative phase believed that the prerequisite for the ESP course should be intermediate level, and those not reaching this level should be allowed to enrol in General English courses with a view to moving into

the appropriate course when they were suitably prepared. The next chapter discusses the findings of both the quantitative and qualitative phases directly and explicitly in terms of the research questions.

## CHAPTER 6

### DISCUSSION

This chapter discusses the findings of the quantitative and qualitative phases and is organised to directly address the four research questions. The first section (6.1) discusses the perceptions of English lecturers and the six disciplinary groups of academic and industry stakeholders, regarding the necessity of having an ESP course designed for undergraduate students. Section 6.2 discusses all the stakeholders' preferences regarding the scope, duration and syllabus of an ESP course. The next section (6.3) discusses the students' needs and preferences in terms of specific ESP content areas. Section 6.3 is divided into eight subsections with discussions of the topics of cross cultural awareness, writing, vocabulary, reading, grammar, listening, speaking and business communication. Section 6.4 discusses the stakeholder perceptions of possible challenges (6.4.1) and measures (6.4.2) that face ESP course design in the context of Cambodian higher education.

Before discussing the findings, it is worth reiterating the main aims and research questions of this research. This study aimed to offer a needs and situation analysis model to assist in the ESP course design in the context of Cambodian higher education, by conducting an enquiry into this matter with multiple stakeholders using what can generally be described as a case study approach. From the results of the study, recommendations are provided for ESP course development for the Faculty of Science in Cambodian HEIs, which is the case under consideration here. To achieve the aims, four research questions were formulated:

1. What are the Cambodian academic and industry stakeholders' perceptions about the necessity for developing an ESP course for the undergraduate program in Cambodian HEIs?

2. What are their perceptions about the scope, duration and syllabus of the ESP course?
3. What are their perceptions about the undergraduate students' ESP needs?
4. What are their suggestions regarding the challenges and the measures needed to assist in the ESP course design?

The findings from the quantitative and qualitative phases are discussed regarding the four research questions. Specifically, the research questions are answered in sections 6.1 to 6.4 are answered using a combination of quantitative and qualitative findings. The final section (6.5) concludes the chapter by describing the contribution of the study.

### **6.1 What are the Cambodian academic and industry stakeholders' perceptions about the necessity for developing an ESP course for the undergraduate program in Cambodian HEIs?**

The results of both quantitative and qualitative phases indicate the positive attitude among all stakeholder groups to having of an ESP course developed and available for undergraduate students. In the quantitative phase, the support of the participants can be witnessed by the overall high mean score, which is above 4.0 for all the questionnaire items in section B. Stakeholders agreed on the importance of developing English for academic and occupational purposes. Specifically, both questions received the mean scores of 4.5894 ( $SD = 0.56496$ ) and 4.6862 ( $SD = 0.50708$ ). This indicates that the initial suggestion about the benefits of incorporating an ESP course into the existing English program made by Macalister (2013) was recognised by all stakeholders. It is possible that participants recognised the crucial role of ESP for the broader ASEAN community and for growing global businesses (Kirkpatrick, 2010; Secretariat, 2008).

The support from relevant stakeholders is a positive sign for any course development. Kim (2008) argues that language course innovation must be supported by various stakeholders because they are the agents for new course implementation and the change should be appropriate within the context and the needs of the stakeholders. When the main implementers, particularly teachers as stakeholders, are aware of the need for innovation in language program, the new courses can be implemented (Markee, 1997). In this study, the stakeholders' positive attitude towards the development of an ESP course is quite evidently a key factor and this can contribute a great deal to the successful implementation of the course in the university, and to similar courses throughout Cambodian and even Asia.

Brindley and Hood (1990) argue that a change in a language curriculum must also be aligned with, or reinforced by, policy. In Cambodia HEIs, the shift from general English towards ESP occurred about a decade ago (Macalister, 2007; Macalister & Sou, 2006). In 2013, the Macalister (2013) small scale evaluation of RUPP's English program recommended the university incorporate an ESP course into the existing English program. More recently in 2014, the Department of Higher Education offered training and technical assistance to those HEIs that came under its supervision, to develop ESP courses alongside their existing general English courses (DHE, 2014b). In line with this trend, several higher education institutions including RUPP, revised and developed their strategic plan to design and include ESP courses to meet local and regional needs and to establish the ESP course as a reality (RUPP, 2014). The support from students, graduate employees, employers and lecturers coupled with the support from the government is the first step towards the development of an effective curriculum for RUPP as well as other universities.

Additionally, the majority (more than 80%) of the participants predicted that the prospective number of student enrolments in the course would be high. It is interesting to note that more

than 70% of the participants argued that the course should be elective rather than compulsory. It might be expected that if a course is compulsory, and therefore all students must enrol in it. Then classes would likely have greater numbers than classes that have to compete for student interest. Moreover, there are other English classes that could be reasonable options for students such as academic reading and writing, that would drain from the ESP course.

The issue of whether the course should be elective or compulsory was triangulated with the qualitative findings. The qualitative results were consistent with the quantitative findings. More than half of the participants still maintained that the course should be elective. Most of the justification given by the interview participants for an elective ESP course involved freedom of choice and the difficulty of integrating a compulsory course into the already heavy undergraduate students schedule. Many participants argued that if the students thought the course useful for them, they would enrol into the course. However, a good number of qualitative participants argued that ESP courses needed to be compulsory as a means of raising the quality of undergraduate education and to adequately prepare students for the international job market. This issue will need to be thoroughly discussed among stakeholders in the institution where an ESP course is offered. Many of the science and engineering courses have a fixed syllabus with few options for electives. However, this is not likely to be a significant factor given the Government intends that English will be a priority in all HEIs in Cambodia.

## **6.2 What are their perceptions about the scope, duration and syllabus of the ESP course?**

This section has three subsections: 6.2.1 discusses stakeholder perceptions on the scope of the ESP course; 6.2.2 the duration; and, 6.2.3 the syllabus of the ESP course.



### *6.2.1 The scope of the ESP course*

The findings from both phases reveal that most of the participants preferred the ESP course to be *highly* specific or with a *narrow-angled*. In the quantitative phase, more than 70% of participants preferred discipline specific rather than a whole faculty ESP course. However, it should be noted that almost 70% of graduate employees preferred a faculty ESP course.

Perhaps this portion of this stakeholder group believed that the undergraduate students needed to build English proficiency in Science in general, as they would be working with people from other disciplinary backgrounds and having to communicate with them.

Regarding the course specificity, Hyland (2006) argues that ESP courses should be (highly) specific or narrow-angled. He justified his argument on two grounds. First, language is seen as construed forms of situated action. That is, language communication occurs within a particular circumstance. Second, psychologically, any ESP courses which are relevant to students, motivate them to learn. However, a discipline specific or narrow-angled ESP course design draws heavily on resources, financial resources, teacher capacity, class and tutorial preparation, and so places a considerable burden on a university in a developing country. Cambodian higher education institutions might be better to consider less specificity in the ESP course based on the circumstances of their current and future resource. An elective ESP course does not align well with the need to have a narrow-angled course for the different specialisations. To trial the interest and number of student enrolments, HEIs might develop one or two ESP course offerings followed by an evaluation after, say, two years of implementation.

With regard to the course domain, the quantitative findings reveal stakeholders' preferences for the ESP course to integrate both academic and workplace skills for the undergraduate students. In the quantitative phase, more than half of the participants (64.5%) preferred the

ESP course to be a combination of English for academic purposes and English for occupational purposes. This result is consistent with the studies of ESP course design carried out in other contexts, by R. Oliver et al. (2013) in Australia and Bosuwon and Woodrow (2009) in Thailand; in both cases there was a combination of skills for academic and occupational purposes.

However, almost half of the subject lecturers (47.5%) preferred the course to focus mainly on developing students' current academic skills. This suggests this particular group of stakeholders placed a priority on the students' academic over their future career needs; this result is not surprising. In Iran, a research study investigated academic stakeholders' views and found a preference for focusing on ESAP for computer engineering undergraduate students (Atai & Shoja, 2011). As it is difficult to reconcile the opposing views of the stakeholders in this study, and given the lack of staffing and resources in Cambodian HEIs, it would be seem reasonable to suggest that the English program could trial an ESP course with a mixture of academic and occupational skills for one department for two years. The experimental ESP course could then be evaluated and any such trials would assist in further course development.

### *6.2.2 The duration, proficiency levels and prerequisites of the ESP course*

Regarding ESP course duration, at least two semesters was considered to be an appropriate duration. In the quantitative phase, while 46.7% of participants thought two semesters, 31.5% of them felt three semesters were best, which make a total of 78.2% who would have the course of two or three semesters. The findings were in line with other findings of this study regarding the preferred number of proficiency levels and prerequisite for the ESP course.

Regarding the ESP course proficiency levels, more than half (52.2%) of the participants preferred the course to consist of three levels. However, 31.9% of them preferred the course to consist of two levels. Other options included four levels and more. Given the varied English proficiency of students, two levels may be considered appropriate but the decision would likely be dependent on whether existing general courses are revised and any agreement to perhaps share some of the ESP content focus.

When asking about the pre-requisites for the course, it is interesting to note that the preferences were varied, ranking from elementary to intermediate, although the majority of participants preferred intermediate level as the prerequisite level. Notably, a similar number of participants (22.6%) believed that there should be no pre-requisite level for the ESP course. Among the academic and industry stakeholders, English lecturers (50%) and subject lecturers (43.2%) were the two major groups who preferred intermediate, whereas most graduate employees (42.9%) preferred to have pre-intermediate as the course pre-requisite English level.

Regarding the prerequisite levels, the findings are consistent with the argument of Richards (2001), who states that ESP students should advance their general English proficiency before studying in the ESP course. In Cambodia, many students still have low English proficiency by the time they enter the bachelor program. Even though students go through six years of instruction in their secondary education, many students, especially those from the countryside, possess limited knowledge of English (DHE, 2014b). The only time they are exposed to an English-speaking environment is in the classroom. However, the target language is not widely used in the classroom. This is the limited knowledge of English among English instructors and also limited resources such as teaching aids and technology tools at the secondary education level in Cambodia. Another reason for poor English among students

is that there are very few contact hours of English instruction in secondary schools and even universities. The issue of undergraduate students' low English proficiency is discussed further in Section 6.4.

Regarding the course duration, there was one interview participant concerned that the existing academic timetable for the undergraduate students was already overloaded; therefore, incorporating many semesters of ESP course would present a challenge for the curriculum team. In Cambodia, the common length of English language instruction in the tertiary context varies from two to six semesters. For universities, a great many have four or more semesters of general English language instruction for the undergraduate students already, and their English language program could accommodate the ESP course in addition to their existing general English and general academic English courses. The general English program aims at building undergraduate students' general English proficiency and academic skills. For other Cambodian HEIs where there are fewer semesters of English instruction, these decisions would need to take into account the available resources including the teaching staff and finance.

In 2014, the Cambodian Department of Higher Education undertook a workshop survey and the results indicated that the ministry should impose guidelines to cover the duration for the ESP course for those higher education institutions that were under its supervision. This is because in Cambodia particularly, the duration of the ESP course issue has emerged as a contentious issue among HEIs. The guidelines proposed that at least four semesters of English instruction be offered for the undergraduate program (DHE, 2014a). These guidelines had not been implemented at the time of submission of this thesis (personal communication, October 13, 2016). Perhaps, based on the above guidelines, at least two semesters of ESP or ESAP

instruction could be incorporated into their existing English program. This may change dependent on HEIs and government initiatives.

There seems to be no existing literature commenting about what should be the duration of an ESP course. This research is among the very few, if not the first one, which identifies a preferred duration, along with proficiency levels and requisites for an ESP course and provides recommendations for HEIs in Cambodia (see Conclusion chapter).

### ***6.2.3 The syllabus and assessment for the ESP course***

#### ***6.2.3.1 The syllabus of the ESP course***

Regarding the syllabus of the ESP course, the findings from both the quantitative and qualitative phases reveal that most of the participants prefer a hybrid syllabus. In the quantitative phase, the participants indicated several syllabus options, they thought appropriate, including skills-based (85%), competency-based (57.4%), task-based (41.5%), integrated (27.6%) and functional (25.9%) syllabuses although the skills-based type received the highest number of preferences.

It is not surprising that the skills-based syllabus received the highest score because this syllabus type is well known by most language learners and has been widely used in the ESL context and in specific domains. The majority (87.5%) of English lecturers preferred task-based to other syllabus types. English lecturers have received training in English language methodology so are aware of the different syllabi the nature of the teaching, the objectives and some of the weaknesses. According to Ellis (2004), task-based language learning and teaching helps students perform activities or tasks using the target language and this is helpful in building their communicative competence. It is also the syllabus that aligns with the communication language teaching, which many stakeholders supported.

To validate the preferred syllabus type, the participants in the qualitative phase were probed about their preferred teaching methods and the activities they would like to see used in the ESP course. As expected, the qualitative findings confirmed what was shown by the quantitative results. The interview participants indicated their preferred teaching activities and methods for such a course. Sixty per cent (18 out of 30) of all interview participants, that is both the academic and industry stakeholders, preferred the teaching and activities that they experienced in general English courses. The activities they specifically supported were pair work, group work, presentations, debates and assignments, which enable students to improve the four macroskills and overall language competencies. They also emphasised the importance of developing students' independent learning skills and their research skills, as these are tasks used in academic and professional domains. Some other activities included learner centred tasks to trigger students' interest, which it was expected would increase student motivation and engagement.

The preference over a hybrid syllabus is reflected in the suggested activities. This preference can be explained by considering several factors relevant to the Cambodian context, including its strengths and the complementary nature of the various syllabus types. First, the skills-based syllabus, especially the aspects of integrated instruction of the four macroskills, has been popular (Hinkel, 2010; Richards, 2001) and there are many materials available commercially. Course designers, however, might need to be aware of the downside of the skills-based syllabus, which mostly occurs when an individual macroskill is taught discreetly (Ellis, 2004; Richards, 2001). The recent trend in language teaching and learning is an integration of language skills and the trend can also be seen by high stakes standardised tests such as TOEFL iBT and IELTS (Y. Cho, Rijmen, & Novák, 2013).

Second, the competency-based syllabus is common in academic and professional science fields, especially in the engineering disciplines. In Ghana, the competency-based syllabus has been promoted and developed for Higher National Diploma engineering programs in all polytechnics, with the support of the World Bank and Netherlands Organisation for International Cooperation in Higher Education (Bensah et al., 2011). In Cambodia, a competency-based syllabus is not a formal instruction approach, but its use is evident in the workplace in probation and apprentice type training. Although the competency-based syllabus is effective because it integrates real world tasks, Richards (2001) warns that the tasks might need to be based on research not on teachers' intuition as is sometimes the case.

Third, the task-based syllabus has been popular for second language teaching in informal settings in which it is commonly used, so it is a natural preference among language teachers. Ellis (2004) argues that a learner will acquire a language through carrying out tasks in the target language. The task-based syllabus, however, needs teachers who are highly competent in the target language, which generally makes it less popular in countries that have low levels of teaching resources. Additionally, the design and selection of tasks, either pedagogical or real world tasks, should be based on research evidence and careful needs analysis.

The hybrid syllabus, which is a combination of various syllabus types, is relatively seamless. The strengths of this syllabus outweigh the limitations of an individual syllabus. Moreover, in academic and professional domains, an integrated syllabus can accommodate the range of tasks students need to perform in English. In Cambodia, research on the preferred syllabus types for the ESP courses is non-existent. This study provides recommendations for course designers and policy makers on the syllabus issues in the recommendation section.

### *6.2.3.2 The testing and assessment for the ESP course*

Testing and assessment are major components of the syllabus and reflects the effectiveness of course implementation. That is, when assessment techniques are appropriately employed, students' actual performances are accurately measured (H. D. Brown, 2004; H. D. Brown & Abeywickrama, 2010). Inappropriate application of assessment, conversely, harms both the learning and teaching experience. This section discusses the assessment options for the prospective ESP course for Cambodian HEI students.

Based on the stakeholders' perceptions of testing and assessment, the findings were in line with the preferred ESP syllabus and activities, as mentioned earlier. In the quantitative phase, the findings revealed participants' preference for various assessment types including alternative, formative, traditional and summative assessment. However, there was evidence that the participants involved in the quantitative phase favoured some types of assessment and testing over others: presentation (83%), written assignment (79.8%), final exam (76.5%), quiz (64.3%), midterm test (63.9%), class participation (59.2%), attendance (55.4%), workplace visit report (49.6%) and portfolio (42.2%).

It is interesting to note that two alternative assessment types namely, the presentation and written assignment, and also a traditional assessment type, the final exam, received similar favourable preferred recognition. The least preferred were attendance, workplace visit report and portfolio. All are used in the Cambodian context, but clearly some are less favoured and are actually less frequently used. The simple explanation may be that stakeholders have experienced these types of assessment. Some other respondents, however, as mentioned earlier, did not have previous experience of assessment types. For example, a graduate employee (GEn) explained, "For this [assessment types] question, I don't think I have any



opinions on that. As far as I know, students can be assessed through tests, quizzes, a final exam, attendances, class participation and homework.”

The qualitative findings reinforced the quantitative findings. Almost all (90%) participants regardless of how the data were collected preferred a mixture of alternative, formative, traditional and summative assessment. For example, alternative assessment types including presentation, research projects and debates were suggested, in addition to traditional assessment such as quizzes and summative assessment, namely exam. Alternative assessment is important as it involves the teachers and students in making judgements about the students' progress. Alternative assessment, includes such as portfolios and role plays which are believed to foster learner autonomy, promote student reflection, and encourage collaborative learning (Kohonen, 1999).

The English lecturers, in particular, preferred formative and alternative assessment to traditional and summative assessment. All the interviewed English lecturers argued that alternative assessment reflected students' actual performance and helped them improve language acquisition, but summative assessment lacked this quality (H. D. Brown & Abeywickrama, 2010). By comparison, other stakeholder groups failed to mention these categories. It is possible that the EFL teachers, academic English lecturers have received training about the benefits of innovative assessment. Many university lecturers in Cambodia have received professional development and attended EFL courses overseas, thus they are competent to make judgements on current language teaching methods.

Although alternative assessment was given more weight, especially by the English lecturers group, than summative assessment, several participants who were interviewed, argued that any assessment needed to be in line with the university assessment guidelines, which incorporate both formative and summative assessment. In Cambodian HEIs, a combination of

formative and summative assessment is commonly practiced. This finding is consistent with the findings of a PhD study of Tao (2014) who found EFL teachers in a Cambodian university preferred alternative or innovative assessment types such as portfolio and presentation, but the university's assessment guidelines also imposed traditional assessment types such as written test and exam.

In Cambodia, class attendance and class participation are common assessment criteria in language instruction classes, especially in HEIs. It is believed that class attendance is one of the main contributors to a student's academic success. In addition to the student's attendance, a student's active class participation is encouraged and this is supported by marks. However, Tao (2014) argues that this assessment practice does not reflect the student's actual performance, so relying on class attendance and participation may result in an unfair judgment of a student's actual performance. If educators wish to change perceptions, effort must be made to do so.

Alternative assessment, overall, was more popular than traditional assessment. As mentioned earlier, in the quantitative phase most participants preferred alternative assessment types including presentation and written assignment. In particular, almost all the industry stakeholder groups, graduate employees and employers, preferred presentation and written assignment. H. D. Brown and Abeywickrama (2010) maintain that the current trends on language assessment are more towards alternative and formative rather than summative assessment. Moreover, using multiple sources of information in deciding students' overall performance can reduce any washback effects of an assessment in that more emphasis is placed on helping students improve communicative competence rather than passing the tests (J. D. Brown & Hudson, 1998). Multiple assessment types would also combine to assess

accurately the students' performance in tasks and presentations, which were preferred activities for the ESP course, as discussed in the previous section.

In summary, the stakeholders' preferences were for the ESP course to be a combination of ESAP and ESOP, consisting of at least two semesters and a hybrid syllabus. A combination of ESAP and ESOP was believed to respond to students' current and future needs. There was a preference for the ESP's duration to be two or three semesters. Fewer semesters might not be able to accommodate the need for competencies in both English for academic and occupation purposes. A hybrid syllabus, a mixture of skills-based, competency-based and task-based syllabuses could be seamless and accommodate the nature of the ESP course. Given the preference for an integrated syllabus, a combination of assessment types including alternative, traditional, formative and summative is needed.

### **6.3 What are their perceptions about the undergraduate students' needs?**

This section discusses the research findings on the content areas of the ESP course. All stakeholders in the quantitative phase were asked to rate eight main components. The four macro-skills (listening, reading, speaking and writing), two micro-skills (vocabulary and grammar), cross cultural awareness, and business communication were covered. They were also requested to rank these eight content areas on a Likert scale how they would apply to undergraduate students' academic and future career needs.

The presentation of the following subsections follows the order of importance given to the eight ESP content areas in the quantitative phase. These areas are cross cultural awareness, writing, vocabulary, reading, grammar, listening, speaking and business communication. Each is explained with reference to the qualitative findings and reference to the relevant literature

as appropriate. It is important to note that some content and objectives of each of these areas overlaps and this will be discussed in the respective sections.

### *6.3.1 Cross-cultural awareness*

In the quantitative phase, the results revealed that cross-cultural awareness ranked first among the eight content areas in the ESP course, with a Spearman's Rho correlation score of 0.565. In particular, the participants preferred a number of specific cross-cultural awareness topics including cultural knowledge (72.3%), politeness in different cultures (59.3%), avoiding miscommunication (41.9%), asking questions in different cultures (37.5%), agreement and disagreement in different cultures (36%), cultural stereotypes (31%), and taboo language (24.5%). Cultural knowledge received the most support (72.3%) and politeness in different cultures (59.3%). The least preferred were taboo language, cultural stereotypes, agreement and disagreement in different cultures, asking questions in different cultures and avoiding miscommunication. Some cross-cultural awareness topics such as avoiding miscommunication, received low scores, this might indicate that these topics are components of a general topic of cultural knowledge, which received the highest preference by the majority of the participants (72.3%).

The participants' strong preference for cross-cultural awareness can be explained with one main reason. The participants have recognised a strong relationships with ASEAN member countries and other countries. After the ASEAN economic integration in 2015, there has been a free workflow of skilled labourers with seven prioritised skilled professions: doctors, dentists, nurses, engineers, architects, accountants and surveyors. This increased mobility means undergraduate students in the future will need to work and communicate with people from different cultures (Stroupe, 2013).

Moreover, in multicultural countries, interacting and working with people from different cultures is common and requires skills and ability in cross-cultural awareness. The role of intercultural awareness becomes crucial in multicultural societies, and facilitates effective communication (Agar, 1994; Roberts, 1998). In Korea, for example, Kim (2008), who conducted research into EOP, found that equipping students with cross-cultural knowledge for workplace communication helped them to deal with cultural issues when encountering people of different nationalities at their workplace. In other Asian countries such as Japan, cultural awareness and competence is a key component of the Program for Regional and Educational Exchanges for Mutual Understanding (Stroupe, 2013). In 1990 this program was implemented by the Ministry of Education, Culture, Sports, Science and Technology, and the Ministry of Internal Affairs in order to promote Japan's internationalisation and raise the awareness of Japanese speaking English teachers about the cultures of various countries around the globe. In Cambodia, given that Cambodians do not travel overseas often, their interest in building cross-cultural skills can be justified. Martin and Nakayama (2013) maintain that to understand multicultural relationships such as cultural, religious and ethnic differences, the study of intercultural communication is essential.

### ***6.3.2 Writing skills***

With a correlation score of 0.549, writing was perceived to be the second most important skill to be addressed in the ESP course in Cambodia.

Based on the quantitative and qualitative findings, a number of writing genres were identified. In the quantitative phase, the most preferred writing genre was written assignments (74.2%). The least preferred writing text types included email (30.5%), summary (34.6%), note-taking (35.5%), field-trip report (43.7%) and laboratory report (49.3%). In Cambodia, the written assignment is the most typical form of assessment in HEIs. This might be the chief reason

behind the high preference for writing assignments compared to other writing tasks. Writing is an important skill for university students because they are required to write assignments (Miller, McCardle, & Long, 2014) in order to graduate.

In addition, most participants seemed to favour writing tasks that focused on the immediate needs of undergraduate students during their degree more than tasks in their future job. The findings of these written genres are consistent with the study of Al-Tamimi and Shuib (2010), who identified academic writing skills were needed by petroleum engineering students in the Yemen higher education context. They found that that all the participants perceived the written assignment as the main writing genre and similarly ranked other written text types lower including lab report, exam paper and taking notes in lectures.

In the qualitative phase of this study both academic and industry stakeholders said they preferred students to undertake several writing tasks related to the workplace context. The preferred tasks include writing emails, minutes and form filling. Interestingly, and in a practical vein, one subject lecturer suggested some written communication tasks require the knowledge of technical language and that vocabulary can be combined in writing classes. Vocabulary tasks are discussed further in the next section.

The importance of email writing has also been reported in a number of studies (e.g., Chew, 2005; Evans, 2012; So-mui & Mead, 2000). In Hong Kong, a multinational communication context, Evans (2012) identified workplace email tasks and topics including differences between internal emails and external emails with customers in order to design a course that brought together the real office and classroom tasks. Notably, email is a popular mean of communication that connects people around the globe (Evans, 2012). Email communication and differences between formal and informal language were featured as important tasks to be included in writing tasks.

While written assignment is a crucial writing genre for students in their academic studies, writing tasks for professional purposes such as email and report writing are regarded as beneficial for students in their future jobs. ESP course designers must be selective when deciding on writing academic and workplace genres for the course. This may be a place where some flexibility could be built in depending on the students actually enrolled.

### ***6.3.3 Vocabulary subskills***

Based on the quantitative findings, with a correlation score of 0.511, vocabulary ranked third after cross-cultural awareness and writing as a component in the ESP course. The quantitative findings also reveal stakeholder preference for a number of vocabulary topics including vocabulary strategies, word formation and family, using vocabulary in context and specialist vocabulary including accurate pronunciation. The majority (64.3%) of participants preferred vocabulary strategies to the other vocabulary genres and subskills such as pronouncing specialist vocabulary (44.6%), learning specialist vocabulary (50.3%) and using vocabulary in context (53.6%).

In the qualitative phase, when asked what should be the objectives of a Faculty ESP course, 37% (11 out of 30) of participants argued that undergraduate students should be able to comprehend appropriate technical language of the six disciplines. It was suggested, particularly, that the course enable students to become competent in explaining the specialist vocabulary and terminology in both the English and Khmer languages.

It is interesting to note that the majority of stakeholders preferred strategies for learning in vocabulary and other macroskills which as reported below, should be included in an ESP course. This preference can be explained by the fact that strategy awareness contributes to students' independent learning. For example, Chamot and O'Malley (1996) argue that the

main goal of strategy training is to enable students to control their own learning. A study conducted by Nguyen and Gu (2013) found that after Vietnamese students were intensively trained in using the learning strategies, they improved their self-regulation in their own learning and their performance in their writing tasks. A. D. Cohen (1998) also notes that their course objectives can be easily achieved when students have knowledge of strategies for language learning. Moreover, students with high English proficiency tend to use strategy awareness more than those who do not. Lee and Oxford (2008), for example, found that strategies are more frequently used by students who value the importance of English and consider their English proficiency high.

With regard to acquiring specialist vocabulary, Pecorari, Shaw, Irvine, and Malmstrom (2011) found that the majority of respondents from the six disciplines in a Swedish university had a consensus about the important role of knowledge of subject-specific terminology in English. The emphasis was more on the learning of subject-specific terminology than on general English vocabulary; these are parallel findings to those of the present study. In ESL or EFL countries, many textbooks of the students' specialisation, whether in the library or on the Internet, are in English. To possess the necessary specialist vocabulary to read and understand these texts is helpful for students in their academic studies, especially for their assignments. In addition, in the globalisation era students need to communicate with people around the globe by using English technical terminology. However, learning pronunciation was considered the least important aspect, selected by only 37% of quantitative participants. Perhaps pronunciation is not very important, due to the immediate need being to communicate mainly with non-native speakers of English who are part of ASEAN. That is, it is possible that ASEAN speakers are mostly speakers of the outer circles and are more interested in communication and 'intelligibility' rather than native speaker pronunciation (Lim, 2016). Nickerson (2013) also talks about the need to develop skills for ESP based on



the way second language and foreign language speakers use English around the globe, as English as a Lingua Franca (ELF) which goes beyond the models of Western teaching and native speaker models.

Vocabulary has traditionally been taught discreetly that is separately. However, in real world contexts, vocabulary cannot be used in isolation in communication. That is, vocabulary is an important component in language learning and teaching especially for foreign language students, because vocabulary helps a learner to acquire the language and it is integrated in to other language skills when doing real world tasks and vice versa (S. Krashen, 1989; Read & Chapelle, 2001). To enable students to communicate effectively in a real life setting, there is a call for the teaching of vocabulary and to integrate it with the teaching of other skills and also grammar, namely lexicogrammar as indicated by functional grammarians (M. A. K. Halliday & Matthiessen, 2004; M.A.K. Halliday & Matthiessen, 2014; Hinkel, 2010).

#### ***6.3.4 Reading skills***

The Kruskal-Wallis correlation score of 0.5 meant reading ranked fourth after cross-cultural awareness, writing and vocabulary in the quantitative findings. However, in the qualitative phase, reading ranked as the first and so most needed skill.

The specific reading genres and tasks to be included in the ESP course were investigated in both the quantitative and qualitative phases. In the quantitative phase, the participants identified a number of reading skills and genres including: reading strategies (71.8%), specialist text (50.4%), technical journal article (47.8%), authentic text (40.5%), general comprehension (38.1%), instructions (34.3%), speed reading (32.3%), textbook (23.5%) and technical manual reading (11.4%). The majority of participants (71.8%) thought reading strategies deserved the most focus for the ESP course, whereas there was low preference for

including reading technical manuals, textbooks, speed reading, instructions, general comprehension, authentic text, technical journal article and specialist text. The findings indicate that participants prefer more weight to be given to general reading strategies in order to deal with various text types rather than specialised texts. Notably, reading is considered an important and priority skill particularly at the university level, because there is an increasing load of reading for lectures and assignments as the course progresses (Miller et al., 2014).

In the qualitative phase, interview participants, particularly academic stakeholders, suggested several reading task types mainly relating to academic subjects such as including reading for research assignments. In contrast, industry stakeholders preferred tasks that would be considered relevant to workplace settings, including reading manuals and work related articles. This is not surprising because, while the academic stakeholders are familiar with the academic environment, industry stakeholders know the workplace tasks that technical staff need to perform.

In the academic setting, several studies have revealed that reading is the first prioritised skill among the four macroskills (e.g., Alastal & Shuib, 2012; Chia et al., 1999; Pecorari et al., 2011). In the EFL context, in most undergraduate programs students need to consult reading materials in English. In fact, reading has been traditionally taught in all English education, and reading is closely connected with the other macroskills. First, a good reading ability helps improve all other macroskills (Bamford & Day, 2003). For example, reading can be a model for effective writing; it also is the case that readers can make good use of their knowledge of text structure learned in writing (Miller et al., 2014; Shanahan & Lomax, 1986). Second, reading helps learners acquire necessary vocabulary as well as topic related knowledge, useful for speaking and listening tasks such as routine interactions and listening to lectures (Hinkel,

2010; P. Nation, 2007; Zhang, 2009). This suggests the importance of reading in improving other macroskills.

In addition, academics recognising the link between reading and other skills, real world communication contexts demand integration of the four macroskills. In response to this, integrated instruction of the four macroskills is popular and promoted in both contemporary ESL or EFL instruction and standardised tests such as TOEFL iBT and IELTS (Y. Cho et al., 2013; Hinkel, 2010; IELTS, 2016).

Finally, reading strategy knowledge and experience help promote learner autonomy (Oxford, 1999). For example, possessing the skill to use reading strategies helps students improve general reading comprehension, develop reading independence and reduces reading anxiety (Lien, 2011). Ghahari and Basanjideh (2015) found that students who employ reading strategies improve their general reading comprehension of various text types.

### ***6.3.5 Grammar subskills***

Following reading, with a correlation score of 0.492, was grammar ranked fifth. In particular, participants in the quantitative phase identified a number of grammar points and topics that should be covered including relative clauses (61%), logical connectors (54.2%), reported speech (52.4%), present perfect (50%), passive voice (49.7%), present simple (46.1%) and past simple (39.6%). Around half of the participants wanted these grammar points included in the ESP course. In detail, the majority of English lecturers (86.7%) were particularly interested in relative clauses. One possible reason is that relative clauses feature significantly in academic writing genres.

The acquisition of grammar knowledge, particularly mastering the grammar rules, is believed to be essential in second language acquisition. Grammar has been recognised as a necessary

inclusion in second language classrooms even when teaching in a communicative context (Nassaji & Fotos, 2011). In the Asian context, where English is a foreign or second language, focus on form in grammar instruction is common and important (Nourdad & Aghayi, 2014). The stakeholders' recognition of grammar is indicative of the centrality of grammar instruction in HEIs in Cambodia and it would be wise to continue with this practice.

In the context of communicative language teaching, however, the focus on form and/or focus on formS alone does not adequately enable students to communicate effectively. Loewen (2003) argues that there is a need for both focus on form and meaning, as meaning focus alone would leave linguistic features unnoticed, which is not advisable in the communicative context (Nassaji & Fotos, 2011; Petraki & Gunawardena, 2014). Ultimately, it is necessary for ESP teachers to be aware of the current practice and theory of grammar instruction.

### ***6.3.6 Listening skills***

With a correlation score of 0.472, listening was ranked sixth by the participants in the quantitative phase. The quantitative findings show several preferred listening skills, including listening strategies (75.1%), comprehending messages (53.1%), note taking skills (48.1%), understanding accents (37.5%), understanding main ideas (36.4%), listening to lecturers (25.5%) and listening to instructions (21.1%). However, in the qualitative phase, it is interesting to note, that for the Biology department, listening was reported as being particularly crucial, because students needed to attend classes taught by foreign lecturers, and the mode of delivery was English.

In the academic setting, several studies elsewhere have found oral or aural skills to rank closely after reading and writing in terms of skills considered important to teach in for the ESP courses (Al-Tamimi & Shuib, 2010; Alastal & Shuib, 2012; Pecorari et al., 2011). As the

native language is usually the language of instruction in HEIs (Chia et al., 1999), listening may not be as applicable to students' academic purposes as in some other contexts.

Conversely, in the qualitative phase most industry participants reported that in the workplace the graduate employees' tasks involve communication in English with customers and colleagues, and this includes both written and spoken communication. There is no doubt that most spoken communication genres expect listening comprehension in order to communicate effectively. In fact, to English language teachers, listening and speaking skills are interrelated and the foundation of human interaction (Palmer, 2014b): they are then fundamental to foreign language teaching and learning.

ESP course designers in the EFL or ESL context should be selective regarding the nature of listening skills that are applicable to students' academic studies and future work settings. To provide students exposure to listening in different situations, listening tasks should include professional genres such as telephone interaction, service encounters, presentations, and for academic purposes, include listening to lecturers and other types of presentations.

### ***6.3.7 Speaking skills***

In the quantitative phase, speaking was ranked seventh with a correlation score of 0.448 after listening skill. It is possible that listening and speaking overlapped in different aspects.

Speaking is a skill that is complementary to listening and is frequently a preferred mode of communication and thus very important (Palmer, 2014b). The participants preferred several types of speaking skill and genres for the ESP course, including presentation (74.9%), debate (66.1%), group discussion (48.9%) and pronunciation (37%). It is interesting to note that most English lecturers preferred the first three speaking skills.

However, speaking skills are important for a student's future, as in their job(s), they most likely will be required to communicate with customers and colleagues from other nationalities who use English as a lingua franca. In the qualitative phase most participants, especially industry stakeholders, highlighted the value in developing students' speaking skills in workplace settings. Examples that were offered include professional informal conversation, or small talk about work related and general knowledge topics.

It is not surprising that in most EFL or ESL academic settings, good speaking and listening skills are not required. For example, in an academic setting, speaking was found to rank last among the four macroskills in the study of Alastal and Shuib (2012). Interestingly, however, Alastal and Shuib (2012) found that skill in speaking was found to rank first among the skills that students preferred to learn. This indicates that, as with listening, speaking is not very important for students' academic studies in ESL or EFL countries, but students perhaps foresee the importance of these two skills for their future careers. Notably, however, speaking overlaps with cross cultural skills mentioned in Section 6.3.1. Negotiating with customers, making presentations and group discussions would be useful tasks to build students' ESP professional capacity.

### ***6.3.8 Business communication***

With the lowest correlation score of 0.401, business communication was ranked last in terms of inclusion in the ESP course. This low correlation score is as expected, as perhaps many participants thought that the business communication was applicable only to undergraduate students' future jobs but not very useful for their current academic studies.

Notably, several tasks or skills within the general category of business communication, overlapped with speaking and listening skills mentioned earlier, including presentation and

communication in the workplace setting. In the quantitative phase, participants indicated they preferred several subtopics of the business communication genre, including formal and informal language (71.6%), language for presentation (54%), business report writing (53.4%), communication in business meeting (46.9%), conversation skills (44.9%), business letter writing (41.6%), business email writing (39.6%), language for self-introduction (31.4%) and language for telephone communication (26.7%).

In the qualitative phase, most interview participants thought that business communication skills should be incorporated into the ESP course. For example, three out of six undergraduate students and two out of six graduate employees supported incorporating business communication into the ESP course because it was believed that the undergraduate students needed these skills in the future, and the English program at that university had enough time available to accommodate this ESP course content.

In the context of multinational companies, Kim (2008) suggested an ESP course develop students' basic daily communication and communication in the workplace skills. Perhaps business communication can be integrated in to speaking and listening tasks as mentioned earlier, and course designers would be wise to consider the available resources and the ESP course timeframe at their institution as well as be selective regarding the ESP course content elements that are prioritised for the students.

#### **6.4 What are their suggestions regarding the possible challenges and the measures needed to assist in the ESP course design?**

This section is divided into two subsections. Subsection 6.4.1 discusses the perceived challenges in developing the ESP course in the Cambodian higher education context and subsection 6.4.2 discusses perceived measures to deal with these challenges.

### ***6.4.1 Challenges***

To increase the success level of an ELT innovation, a comprehensive analysis of the innovation context is crucial. Therefore, anticipation of challenges before implementation of the ESP course increases the level of success. The analysis of context or constraint analysis involves consulting and communicating with relevant stakeholders (Wedell, 2009a). Hence investigating stakeholder perceptions of anticipated practical challenges should assist in the curriculum design process.

In the quantitative phase, the participants anticipated several challenges for ESP course designers, namely English lecturers with little specialist knowledge (64.9%), students with low English proficiency (61.4%), students with mixed English proficiency (52.2%), limited teaching facilities (48.1%) and lack of teaching materials (42.8%).

In the qualitative phase, all English lecturers acknowledged their limited knowledge of student specialisation as a challenge in teaching in the ESP course. That is, they admitted that they would not be able to teach the discipline ESP course effectively, especially when compared with what they could do in a general English course. Many admitted that they lacked confidence as well as willingness to teach an ESP course, as to do so would increase their workload.

*English lecturers with little specialist knowledge* is a common challenge for any institution having a newly established ESP course. I. S. P. Nation and Macalister (2010) maintain that the limited number of qualified lecturers for an ESP course is a main constraint in ESP course implementation. Basturkmen (2010) reported several case studies that have faced this challenge when implementing an ESP course. Similar findings were also reported in other several studies, such as, for example, Atai and Shoja (2011) who discovered a lack of



knowledge of students' discipline among ESAP lecturers in the Department of Computer Engineering in the Iranian academic ESP context. Another study by Kim (2008) found that it was a challenge for the EOP courses in Korea when the teachers did not have expertise in every day and workplace communication skills.

In fact, it reflects the reality that English lecturers have been trained to be general English lecturers and not ESP lecturers. R. Howard and G. Brown (1997) argue that there is very little attention given to ESP teacher education, and most ESP teachers are English teachers who have transformed themselves to be ESP teachers. Research conducted by Orr (1995) revealed that only 5% of English for Science and Technology (EST) teachers held a university degree and has experience in teaching EST.

The issue of willingness was also seen as an important obstacle and many teachers offered recommendations on the topic. Subject lecturers were very critical of English lecturers' lack of knowledge and suggested that they provide workshops for English lecturers about content subject areas. They also suggested collaborating with English lecturers on ESP course design.

The second perceived challenge noted by participants in the quantitative phase was developing an ESP course for students with low English proficiency. In the qualitative phase, several participants argued that students' low English proficiency needed to be considered. This finding reflects the reality that many Cambodian students still possess a low general English proficiency. Students, whose English proficiency is not up to intermediate level, can be advised to attend a general English course to reach the required prerequisite level of the ESP course before enrolling in the course.

It is interesting to note, however, that many interview participants argued that undergraduate students could attend the ESP course without any prerequisite as they already knew the

technical language in their specialisation, and this assisted them in studying in the English course.

Regarding students' language proficiency for the ESP course, Richards (2001) and Basturkmen (2010) maintain that in many cases ESP students typically have advanced general English and attend the ESP course to master specific language skills they need. In the EFL context especially in developing countries like Cambodia, most of the undergraduate students possess low English proficiency, which could be a difficulty in the ESP course implementation. This issue is common in other EFL or ESL countries. For example, Atai and Shoja (2011) found that the low level of students' English proficiency as one of the main challenges in the ESAP course for computer engineering students in Iran. This is not only the case in ESP classes; this phenomenon is also common in general English classes, especially in large classes throughout the world, including Cambodia (Mazdayasna & Tahririan, 2008; Renaud, Tannenbaum, & Stantial, 2007). The issue has currently been a challenge, so ESP course designers might consider measures in order to deal with this challenge. The recommendations are discussed in the following section.

The next challenge to which attention was drawn by almost half (42.8%) of the participants in the quantitative phase, involved teaching materials for the ESP course. In the qualitative phase, the teaching material was also one of the main concerns for the participants, but especially the English lecturer group. Some lecturers seemed to prefer commercial textbooks, while others maintained that the university made materials that were more appropriate to students' needs and context than the commercial textbooks.

Developing teaching materials can be difficult for the majority of non-native speaker (NNS) teachers in English as Lingua Franca (ELF) countries. It has been acknowledged that ESP is moving towards an ELF model where ESL and EFL have blurred boundaries (Nickerson,

2013). A study done by Macalister and Sou (2006) found that Cambodian teachers who were qualified to teach English reported that they were not confident compiling teaching materials, that would respond to students' needs and context. In many cases, NNS teachers heavily depend on their textbooks as the main teaching materials and syllabus. Teachers might also worry that they would have to develop ESP materials for different levels and this would add enormously to their workload as it would be in addition to what is already a heavy schedule.

Choosing appropriate textbooks and developing teaching materials to address students' needs and interests in an appropriate context would be a major obstacle to the implementation of an ESP course. To address these challenges, the universities need to take many precautions.

Perhaps the government could assign a group of academics to design a range of materials or evaluate textbooks to be used in universities as a basis and starting point for ESP courses.

*Limited teaching facilities* was also another challenge that one interviewed subject lecturer was concerned about. Limited teaching resources including lack of audiovisual aids such CD players and projectors have also been reported elsewhere as being in short supply or of poor quality especially in developing countries, and it is true in Cambodia.

The following section discusses these issues, in the light of current practice and based on stakeholder suggestions.

#### ***6.4.2 Measures to resolve challenges***

To help resolve the above challenges, several measures which were surveyed in the quantitative phase and further explored in the qualitative phase, included collaboration between English and subject lecturers, collaborative teaching and learning between lecturers and students, developing training for ESP lecturers, inviting guest speakers to provide

lectures, utilising commercial textbooks, teacher-made materials, authentic materials, guest lecture notes, placement tests and English supplementary classes.

In the quantitative phase, to solve the issue of English lecturers with little specialist knowledge, the participants preferred several measures, including collaboration between English and subject lecturers (64.9%), collaborative teaching and learning between students and teachers (57.8%), developing ESP training for English lecturers (56.3%) and inviting guest speakers to provide lectures (26.5%). The main measure suggested by most participants in the quantitative phase (64.9%) was collaboration between English and subject lecturers. In the qualitative phase, many participants suggested subject lecturers and English lecturers collaboratively design the materials so that they respond to the students' needs and context. Many discipline lecturers suggested they provide workshops relating to subject content areas to English lecturers. Another interesting qualitative finding is that it was also suggested that subject lecturers be also considered prospective ESP lecturers.

The least preferred measures include collaborative teaching and learning between students and teachers (57.8%), developing ESP training for English lecturers (56.3%) and inviting guest speakers to provide lectures (26.5%). In the qualitative phase, English lecturers were asked to work with subject lecturers in the training for ESP and the design of ESP teaching materials. Markee (1997) argues that training is necessary for relevant stakeholders to successfully implement any courses. In fact, subject lecturers can also be trained to be ESP lecturers. Taylor (2007) suggests training discipline lecturers about English language instruction in order to supplement ESP lecturers with a lack of specialised discipline knowledge. In addition, Gollin-Kies et al. (2015) point out that the professional development for ESP needs to be ongoing, because the teachers need to stay engaged with the specialised fields. This would seem a measure to address potential conflict and dynamics between subject

lecturers and English lecturers that could meet with success. English lecturers were also concerned that teaching ESP courses would impose an unnecessary burden and advised that the department assign all lecturers to teach ESP and share the workload. These administrative and management challenges would need to be taken into careful account by each institution.

Regarding ESP course material design, the co-design of materials has been found effective in several studies. Ahmed (2014) recommends ESP lecturers and subject lecturers co-design the materials because both sides have expertise in language teaching and content knowledge of the students. However, there was a concern about the busy teaching schedules of both sides, and it was a main concern raised in the qualitative phase. Also, many participants argued that Cambodians may not have a collaborative spirit. Therefore, in the design process, facilitation by the institution leader was called for, to assist the collaboration between subject teachers and English teachers, which should be encouraged, especially at the early stage of the ESP course implementation (Ahmed, 2014).

Collaborative teaching and learning between lecturers and discipline students was the most important measure raised by the participants in the quantitative phase. In the qualitative phase, some participants argued that students could explain the specialist terminology to ESP lecturers, who possess little knowledge of students' specialisation. However, this measure was also met with some resistance, especially among subject lecturers and undergraduate student stakeholders. They thought that undergraduate students did not have the English language capacity to explain to English lecturers.

Others argued that being an ESP teacher does not necessarily entail expertise in students' specialisation, but rather the possession of teaching methods, knowledge and techniques that enables English teachers to teach the ESP courses. According to Ferguson (1997), English lecturers do not necessarily have to possess the specialised knowledge of their students, but

they should possess EFL or ESL specialist knowledge such as teaching methodology to facilitate their pedagogical decisions in the language for specific purposes classes.

Additionally, several effective techniques that ESP teachers can use have been investigated.

Wu and Badger (2008) found several techniques in use to deal with teachers' limited knowledge of students' specialisation in the ESP classrooms including translation of the technical words into students' native language. Therefore, appropriate ESP training or/and professional development courses could improve English lecturers' competence, and this could be introduced and financed by the government.

Regarding teaching materials for the ESP course, most participants in the quantitative phase preferred teacher-made materials (87.3%), commercial ESP textbooks (72.9%), authentic materials (70.5%) and guest lecture notes (62.8%). In the qualitative phase, one graduate employee indicated they preferred teacher-made materials to commercial textbooks. She argued that teacher-made materials better responded to students' needs and context than the commercial textbooks. However, one interviewed English lecturer preferred utilising commercial textbooks, because most like her acknowledged they were not competent and confident in developing ESP teaching materials.

The English lecturers' preference for teaching materials developed in house commercial textbook by English lecturers is consistent with a study done by Macalister and Sou (2006). They found English lecturers who were qualified to teach English at a Cambodian university tended to be reluctant to develop teaching materials. However, several participants in the qualitative phase argued that commercial textbooks did not respond to students' specific needs and context. To develop feasible ESP teaching materials, it might be best to have English lecturers work with or trained by ESP teaching materials specialists. Additionally,

English lecturers need to coordinate with subject lecturers on the choice on commercial textbooks appropriate for the context.

Several studies have supported collaborative or co-designed teaching materials for ESP courses (Ahmed, 2014). While ESP lecturers are considered the experts in language, subject lecturers are the specialists in the students' specialisation. However, it might be a challenge for both sides to work together. One commonly raised reason for difficulties in this regard is the fact that they all have their busy teaching and working schedules. English lecturers and subject lecturers in the qualitative phase acknowledged that they might not have time available for designing material together, because all their office and working hours were occupied by their routine teaching commitments. To coordinate this issue, the leaders of the institution need to be involved and facilitate the design process (Ahmed, 2014).

Concerning students' low English proficiency, most of the interview participants suggested students take supplementary English classes or English bridging courses before enrolling in the ESP course. The students with low English proficiency might attend the university English support program or a private English program to be eligible for enrolment into the ESP course. Additionally, undergraduate students are required to sit for a placement test before starting their English class. With the placement test results, students can be placed in the right levels for the bridging courses and also for the ESP course. Another undergraduate student commented that students could improve their general English proficiency through the university General English program and other supplementary courses including the Summer School Course. These, of course, would depend on the resources and availability of courses in each institution.

Regarding placement tests, Morante (2012) maintains that a placement test helps students to succeed in their learning, when it is employed appropriately. Based on the test results,

students with the right proficiency level can enrol directly into the ESP course; otherwise attend general English course or supplementary bridging course. Low-level students can be helped by the bridging course. Tertiary bridging courses or academic programs focus on language supplementation are useful (Swartz & Cilliers, 2013) but might not viable to many HEIs in Cambodia. Therefore, low-level students might enrol into general English courses before they can enrol into the ESP course.

## **6.5 Summary**

This chapter discussed the quantitative and qualitative findings and in doing so attempted to answer the four research questions. The findings were interpreted in relation to the relevant literature.

Regarding the importance of ESP course design in Cambodia, most academic and industry stakeholders had a similarly very high positive attitude towards the development of the ESP courses. Additionally, the majority of participants believed that the course would attract of students. It is interesting to note, however, that many participants argued that the course should be elective. This indicates that the importance of ESP course development has been recognised by relevant stakeholders but needs to be trialled before final decision on its elective or compulsory nature.

Regarding the scope of the ESP course, most participants preferred the course to be discipline specific or narrow-angled. However, this course type puts a high demand on resources, including highly qualified ESP lecturers and financial resources in conducting research to respond to students' needs. Additionally, most participants preferred the course to combine both English for academic purposes and English for occupational purposes.



Regarding the course duration, most participants thought that two or three semesters should be sufficient to address students' academic and professional needs. However, more than half of the participants preferred the course to consist of three proficiency levels, and the prerequisite level to be intermediate. These decisions will need to be considered based on each institutions requirements and resources.

Regarding the course syllabus, both quantitative and qualitative findings reveal participants' preference for a hybrid syllabus. This syllabus type synthesises several syllabus types, including skills-based, competency-based and task-based, as each syllabus complements each other to make the hybrid syllabus strong and appropriate for the nature of the course, which combines both EAP and EOP.

The preferred assessment types reflect the preferred syllabus for the course. The preferred assessment incorporates alternative, traditional, formative and summative assessment, which is applicable to the Cambodian higher education context.

Regarding the teaching methods for the ESP course, the majority of the interview participants recommended that the course adapt the methods of the general English course, specifically a student-centred teaching and learning method. A variety of tasks and teaching and learning activities were suggested. These activities include pair work, group work, group discussions, presentations, debates, frequent quizzes and project-based assignments.

Among the eight surveyed content areas in the ESP course, cross cultural awareness was ranked as the first priority for ESP course to respond to undergraduate students' academic studies and future jobs, followed by writing, vocabulary, reading, grammar, listening, speaking and business communication. It is interesting to note, however, that business communication and speaking was of lowest priority. There seemed to be a preference for

developing communication skills, including speaking and written tasks for the workplace, and writing and reading for academic purposes. Additionally, to assist the undergraduate students to communicate effectively in real world contexts, there was also a need for the integrated instruction of the four macroskills together with vocabulary and grammar.

The research revealed a number of challenges in designing an ESP course. The raised challenges include English lecturers with little specialist knowledge of students' discipline, students with low English proficiency, limited teaching facilities and lack of teaching materials. To assist with the ESP course design, several measures were suggested by the participants in both phases. The measures include collaboration between English and subject lecturers, collaborative teaching and learning between lecturers and students, specialised training for ESP lecturers and inviting guest speakers.

With regard to the development of materials, a choice needs to be made between utilising commercial textbooks and teacher made materials. It was suggested that both subject and English lecturers contribute to material design. The measure to address students' low English proficiency was administering placement tests and offering supplementary English classes for students.

The next chapter concludes the thesis and provides recommendations for ESP course design in Cambodia.

## CHAPTER 7

### CONCLUSION

This chapter concludes the thesis by overviewing and summarising the study, discussing recommendations, limitations, and directions for future research. The first section of the chapter (7.1) briefly sets out again the rationale and research questions of the study, and presents the methodology employed. Section 7.2 discusses the major findings of the study in the same sequence as the order of the research questions. Section 7.3 provides recommendations for ESP in HEIs in Cambodia and more broadly in countries that have EFL generally. This chapter also describes the limitations of the study (7.4) in terms of scope, sampling techniques, and the model. Finally, section 7.5 provides directions for future research in the areas of ESP curriculum development, and needs and situation analysis.

#### **7.1 Rationale and research questions of the study**

The era of global exchange and trade and the development of the ASEAN economic community have contributed to a need for equipping Cambodian university students with professional skills in order to enable them to work within this new context. In response to this need, some HEIs have developed ESP courses as part of their English language program. However, these courses have not been developed systematically and have generally not been supported by any needs and situation analysis (DHE, 2014b). As a means of helping HEIs deal with this issue and to respond to the limited ESP research in Cambodia, this study offers a research-based model in needs and situation analysis to assist ESP course design.

The present research also helps fill the gaps in the ESP literature as discussed earlier. First, there has been an attempt to address the need for more contextual needs analysis research on ESP course design in many Asian countries and certainly Cambodia. Second, while previous

studies have engaged either academic or professional stakeholders, this study recruited multiple stakeholders, namely academic and industry, in identifying their perceptions about what ESP students need. Finally, this study employed a mixed methods design combining quantitative and qualitative data, which is an emerging research trend in the ESP field (Gollin-Kies et al., 2015).

To address the aforementioned gaps, an attempt was made to develop a needs and situation analysis model to assist in the ESP course design in the context of Cambodian higher education. Specifically, the present study conducted such an analysis to assist in the design of ESP courses in Cambodian HEIs, by recruiting multiple stakeholders and using a case study approach. To achieve its aims, four research questions were formed:

1. What are the Cambodian academic and industry stakeholders' perceptions about the necessity for developing an ESP course for the undergraduate program in Cambodian HEIs?
2. What are their perceptions about the scope, duration and syllabus of the ESP course?
3. What are their perceptions about the undergraduate students' ESP needs?
4. What are their suggestions regarding the challenges and the measures needed to assist in the ESP course design?

## **7.2 Research methods of the study**

A mixed methods approach, namely the explanatory sequential mixed methods design, was employed in this study. The explanatory sequential mixed methods design began with the quantitative phase, followed by the qualitative phase, for the purpose of complementing the quantitative results (Creswell & Plano-Clark, 2011).

The present study employed explanatory sequential mixed methods design because of its strengths in answering research questions such as those posed in this inquiry. The first strength is that it requires fewer resources compared to other mixed methods designs; therefore, it is popular for researchers, especially in the educational field (Creswell, 2011). The explanatory nature is another strength of the explanatory sequential mixed methods design. The qualitative findings help to explain and elaborate the quantitative findings. In the current research the explanatory sequential mixed methods design helped obtain valid findings.

To collect the quantitative data, questionnaires were employed. The questionnaire is a common and popular instrument in needs analysis and second language research (Long, 2005; Mackey & Gass, 2005; Richards, 2001). The low cost in time and money is a well-known advantage of the questionnaire (L. Cohen et al., 2011; Dornyei, 2003; Gillham, 2008; Kumar, 2014; Long, 2005; Walter, 2010). Anonymity is another advantage. When the researched participants are well aware that their identity is concealed, they tend to offer true and honest answers (Kumar, 2014). However, the questionnaire also has a number of disadvantages. Two commonly known are lack of depth and follow-up quality. To deal with these weaknesses, the researcher conducted semi-structured interviews. There were two forms of questionnaire employed in this study: distributed questionnaires and emailed questionnaires. The distributed questionnaires were completed on site with the first three groups of stakeholders: undergraduate students, subject lecturers, and English lecturers. The emailed questionnaires were sent to the fourth and fifth groups of stakeholders: graduate employees and employers.

The quantitative findings formed the questions for, and were elaborated by, the semi-structured interview, the research instrument of the qualitative phase. A semi-structured interview is a popular qualitative instrument in the linguistics field and also in educational

research because it achieves elaborate and in-depth responses (Basit, 2010; L. Cohen et al., 2011; Long, 2005). There were two forms of semi-structured interview: face-to-face and telephone interviews. Face-to-face interviews, on the one hand, were employed with the first three groups of stakeholders: undergraduate students, subject lecturers, and English lecturers. Telephone interviews, on the other hand, were employed with the last two stakeholder groups: graduate employees and employers.

An extensive review of the literature helped in the development and refinement of the questionnaires of the study intended for use in a needs and situation analysis model. The questionnaires comprised five sections. Section A collected participants' demographic information. Section B investigated the necessity of the English subject and ESP courses for undergraduate students. Section C identified the necessary skills and topics for ESP courses. Section D analysed the context of ESP courses. A final section (E) sought volunteers to join the second phase of semi-structured interviews, due to their busy schedules.

The research site and participants were based at a Cambodian higher education institution, a representative of the largest group of Cambodian universities (DHE, 2014b). First, in this institution English language instruction was (at the time of submission of the thesis) offered to undergraduate students, but the English program did not offer ESP courses. Second, the university offers multidisciplinary specialisations to the students in the capital city. Most Cambodian higher education institutions are located in the urban areas. Last, the research site is classified by the Department of Higher Education as a Category C university, which represents the largest group of higher education institutions in Cambodia (DHE, 2014b).

Census, snowball, and purposive sampling techniques were employed to recruit participants in the quantitative and qualitative phases.

To recruit the academic stakeholders for the quantitative phase, census and snowball sampling techniques were employed. Since the research was a case study of a Cambodian university, census sampling was employed in the selection of the first three groups of stakeholders. The industry stakeholder groups were recruited using the snowball sampling technique in addition to the census sampling technique, in order to obtain a large number of participants from these two stakeholder groups. A number of their contact details had been changed upon their graduation, so their peers were requested to provide their current details. In total, 341 out of the 500 participants returned the questionnaires with a response rate of 68.2%. Those 341 participants comprised 252 undergraduates, 43 subject specific lecturers, 16 English lecturers, 19 graduate employees and 11 employers.

To select the qualitative participants, a purposive sampling technique was employed. To ensure sufficiency and saturation of information (Seidman, 2006; Teddlie & Yu, 2007), 30 interview participants were purposively recruited from the volunteers involved in the quantitative phase. Six participants were recruited from each of the five stakeholders, which made up 30 participants in total.

The quantitative and qualitative data were analysed separately. First, with the help of SPSS the quantitative raw data were analysed using descriptive and inferential statistics. The findings of the quantitative phase assisted in the organisation of the qualitative phase. Second, the raw data of the qualitative interviews were analysed through thematic analysis. Interview data were deductively and inductively coded with the help of NVivo application. The qualitative findings helped explain, validate, and integrate with the quantitative findings.

To ensure compliance with the principles of human research ethics, an ethical approach was implemented in this study. The researcher obtained ethics approval from the UCHREC and approval from the research site. In addition, each participant was informed about the research

objectives through a participant information sheet and a consent form. Each participant's identity was kept confidential. The raw data were properly and securely managed and stored. The researcher also employed coding techniques to avoid identification of the participants from the data collected.

### **7.3 Summary of major findings**

This section summarises and discusses the main findings of the study from both the quantitative and qualitative phases, in accordance with the four research questions.

#### ***7.3.1 The necessity for developing an ESP course for the undergraduate programs in Cambodian HEIs***

First, this study investigated the necessity of ESP courses for Cambodian undergraduate students. It was among the first situation analysis studies conducted in the context of Cambodian HEI. The results were as expected. The majority of the quantitative and qualitative participants had a positive attitude towards an ESP course for undergraduate programs. In the quantitative phase, the support can be evident through the high mean score (4+) in the questionnaire section A. In addition, most of the participants in the quantitative phase (88.4%) believed that the number of enrolments into the ESP courses would be high. It is also interesting to note, however, that many of them (72.1%) argued that the courses should be elective. The finding was validated by the qualitative interviews. Interestingly, more than half of the qualitative participants (58%) still argued that the courses should be elective, and offered a number of reasons, including allowing students flexibility and students' tight undergraduate schedule. Section 7.4 offers recommendations on the status of the ESP course in the Cambodian HEI context.



The results indicate that the initial suggestion made by the English program review of Macalister (2013) and policy initiatives of the Department of Higher Education (2014) about the importance of ESP course development was recognised by all stakeholder groups. Stakeholder approval of the courses might also mean that they recognised the role of English as a working language and lingua franca in ASEAN and global business communities (Kirkpatrick, 2010). The support from relevant stakeholders could be seen as a positive sign to begin a revision of the current language curriculum in the Cambodian higher education context (Markee, 1997). Another strong argument in favour of the development is that the ministry and the institution of this research have reinforced the innovation of language course design (Brindley & Hood, 1990). The findings thus suggest that Cambodian higher education institutions should work towards the ESP course design to respond to students' needs, especially in the field of science, which is the context of this research.

### *7.3.2 The scope, duration, and syllabus of the ESP course*

This section is divided into three subsections. 7.3.2.1 discusses the scope of the ESP courses, which covers ESP course' domains and specificity. 7.3.2.2 examines the duration of the ESP course, which includes the number of semesters, pre-requisites and proficiency levels of the ESP courses. 7.3.2.3 discusses the syllabus of the ESP course, which also incorporates assessment and teaching methods for the ESP course.

#### *7.3.2.1 The course scope*

The domain of, and specificity for, the ESP course were discussed in both the quantitative and qualitative phases. In the quantitative phase, the findings show that more than half of the participants (64.5%) preferred ESP courses to be a combination of English for academic and English for occupational purposes, 23% of participants favoured EAP and the rest EOP. With

regard to course specificity, many quantitative participants (71%) argued for the ESP course to be narrow-angled (Basturkmen, 2003; Hyland, 2006), that is, the course should be discipline-specific. Interestingly, however, the majority of graduate employees (68.4%) thought a general course might be appropriate.

Regarding the ESP course specificity, Hyland (2006) agrees that ESP should be (highly) specific or narrow-angled. Hyland (2006) justified his argument on two grounds. First, language is seen as construed forms of situated action, that is, language communication occurs within a particular circumstance. Second, psychologically, any ESP courses that are relevant to students motivate them to learn. However, this type of ESP course design demands a lot of resources, including financial resources, teacher capacity, multiple classes and tutorials and preparation, which is a burden on a university in a developing country. Cambodian higher education institutions might need to decide on the specificity of the ESP courses based on their current and future resource circumstances.

#### *7.3.2.2 The course duration*

The duration, proficiency and pre-requisite levels of the ESP course were canvassed in the quantitative phase. Almost half of the participants (46.7%) supported a course duration of two semesters and nearly one third of them (31.5%) voted for the course to be three semesters – that is, the majority of the participants preferred the duration of the ESP course to be at least two semesters. The findings of the preferred ESP course duration were aligned with the preferred course levels. Specifically, more than half of the quantitative participants (52.2%) argued that there should be three levels of the ESP course. When asking about the pre-requisite level of the ESP course, the highest number of the participants, including the English lecturers, indicated an intermediate level as the pre-requisite course requirement. Based on the

findings, ideally, the course might begin with the intermediate level in the first semester, upper-intermediate level for the second semester and advanced level for the final semester.

In the Cambodian higher education context, the length of English instruction varies from two to six semesters. With regard to the course prerequisite level, Basturkmen (2010) and Richards (2001) maintain that ESP students should have a high level of general English proficiency in order to study effectively in the course. This may, however, be a challenge for Cambodian and other Asian higher education institutions, where English is a foreign language. According to a situation analysis report by the Department of Higher Education (2014), many Cambodian students and graduates have English levels not yet up to a working standard. In this study, the quantitative findings also revealed the challenge of students with low English proficiency, which is discussed in a later section (7.4.2.2). Thus, the decision on the course duration, number of proficiency levels and pre-requisite level should be based on the Department of Higher Education's guidelines, the individual institution's policy, financial and physical resources, the availability of teachers and the weight of ESP courses.

### *7.3.2.3 The course syllabus*

A hybrid or an integrated syllabus type was supported by many participants in the quantitative phase, and validated by the finding from the qualitative phase. In the quantitative phase, the skills-based, task-based, competency-based syllabuses received high voting acknowledgement from the participants. In the qualitative phase, in addition, when probing the preferred teaching activities and methods for the course, the participants indicated a preference for an integrated syllabus. Specifically, most of the interview participants provided examples and descriptions of teaching activities that fell into task-based, competency-based, and skills-based syllabuses. The activities included group work, pair work, research projects, presentations and group discussions. This indicates that participants favoured there be a focus

on using a student-centred approach, developing students' awareness of genres of debates, oral presentations and development of research skills.

These findings are in line with current trends in language course design and are appropriate in ESP courses. The skills-based syllabus has been employed for some time in Cambodia and other Asian countries and this at least partly explains the participants' preference.

Stakeholders also recognised the importance of communicative methods that were incorporated into the task-based and competency-based syllabuses in order to build English workplace skills for students. A combination of syllabus approaches, and teaching and learning activities are useful in addressing the variation in students' needs (Ellis, 2004; I. S. P. Nation & Macalister, 2010; Richards, 2001).

The preferred assessment of the ESP course was found to be consistent with the preferred syllabus and activities as stated above. Specifically, presentations and written assignments were the most preferred assessment tasks chosen by most participants in the quantitative phase (83 and 80%). In addition, the final exam was another type of assessment which was chosen by the majority of quantitative participants. The qualitative participants explained their assessment preference. First, presentations, debates and assignment tasks were argued to be useful for both students' academic studies and future career. Second, a final exam was justified as an appropriate method as it was the university's assessment policy. The results are consistent with the study of Tao (2014) who found that the majority of English instructors in Cambodian higher education settings preferred innovative assessment, and needed to incorporate this traditional assessment, namely final exam, as it is part of the university's assessment guidelines. The majority of the interviewed English lecturers preferred an alternative assessment such as critical essays, research tasks, presentations and performance-based tasks. This type of assessment would assess students' English proficiency more

accurately than other methods, increase students' confidence and fluency in communication and foster independent learning skills. However, innovative assessment might be given more weight in the ESP course as it is a contemporary and popular approach in language teaching and a core principle of CLT (H. D. Brown, 2014).

### *7.3.3 The undergraduate students' ESP needs*

Participants in the quantitative phase ranked the macro-skills (speaking, listening, reading and writing), sub-skills (vocabulary and grammar) and two competencies (cross-cultural awareness and business communication) from the most to the least necessary content elements in the ESP course. These findings form the foundation in designing the ESP course and are discussed according to the order of necessity from the most to the least necessary in the course: cross-cultural awareness, writing, reading, vocabulary, grammar, listening, speaking, and business communication. However, the differences in the test scores were minimal, and the qualitative findings provided some different insights.

#### *7.3.3.1 Cross-cultural awareness*

In the quantitative phase, the correlation coefficient score revealed cross-cultural awareness to be the first most necessary topic in the ESP course. This might be because there has been wide awareness among the stakeholders of the necessity of this topic in recent ASEAN economic integration, international business and trade happening around the globe, and globalisation. This phenomenon requires graduates to work and communicate with people from different cultures (Stroupe, 2013). It is also important for Cambodian graduates to be equipped with cross-cultural skills, as many Cambodians travel, work, and study overseas (Xiao & Petraki, 2007). In multicultural societies, to facilitate effective communication, intercultural awareness plays an important role (Agar, 1994; Roberts, 1998). Cross-cultural

awareness topics, which were selected and raised by participants in the quantitative and qualitative phases, include cross-cultural knowledge, politeness in different cultures, avoiding miscommunication, asking questions and agreement and disagreement in different cultures, cultural stereotypes, taboo language, and differences in cultural values. Thus, it is recommended that ESP courses incorporate these cultural knowledge topics, as they are embedded and important elements of communication competence (Canale, 1983).

### *7.3.3.2 Writing skills*

Writing was ranked second after cross-cultural awareness by the quantitative participants. However, a number of studies (e.g., Alastal & Shuib, 2012; Pecorari et al., 2011) in a similar EFL academic context, show that, among the four macro-skills, writing ranked second after reading. This different result can be explained by the fact that the current study addressed both academic and workplace purposes. Although it is not compulsory for undergraduate students to write their assignments in English, they might need to write their assigned tasks in English in the workplace setting, especially after the ASEAN economic integration and movement between Asian countries. Therefore, workplace writing genres, in addition to academic writing genres that are applicable to students' specialisation should also be incorporated into the ESP course. In particular, the preferred writing tasks, reported by the participants, cover tasks and genres relating to both academic and professional settings. Based on the quantitative and qualitative findings, the recommended writing genres include writing assignments, writing laboratory reports, writing field-trip reports, writing different text types, note-taking skills, writing summaries, and formal and informal writing in email communication.

### 7.3.3.3 *Vocabulary subskills*

Vocabulary was ranked third, based on the correlation score of the qualitative findings. The sub-components of vocabulary that received high scores were vocabulary strategies, word formation and family, using vocabulary in context, learning specialist vocabulary, and pronouncing specialist vocabulary. The ability to apply vocabulary in communication, particularly in the four macro-skills, was also raised by the qualitative participants as a main objective for the ESP course. In fact, vocabulary helps learners acquire other language skills (Easterbrook, 2013).

Noticeably, vocabulary strategies and strategies in other macroskills, including reading (see Section 7.3.3.4) and listening (see Section 7.3.3.6) were rated the most preferred skills to be incorporated in an ESP course. In fact, there is a correlation between strategies awareness and autonomy in learning a language. Chamot and O'Malley (1996) maintain that to enable students to control their own learning is the main goal of strategy training. Nguyen and Gu (2013) also found that Vietnamese students, in their study, improve their self-regulation in their own learning and performing their writing tasks, when they are intensively trained about the learning strategies. Noticeably, knowledge of strategies in language learning contributes to the achievement of the course objectives (A. D. Cohen, 1998).

In science disciplines, Pecorari et al. (2011) found that learning technical terminology was found to be more necessary than learning general English vocabulary. In the Cambodian higher education context, possessing specialist vocabulary also helps the students with their wider research in English in their specialised field of studies.

#### *7.3.3.4 Reading skills*

Reading was, by comparison, ranked third after cross-cultural awareness, writing and vocabulary, based on the quantitative findings. On the other hand, reading was ranked the highest among the four macroskills, based on the qualitative findings. The reading skills found from the quantitative and qualitative phase are reading strategies, reading specialist texts, reading technical journal articles, reading authentic texts, general comprehension, speed reading, reading textbooks, reading manuals, and reading emails.

Reading and writing are connected skills, because there is a correlation between a good piece of writing, and reading strategies and comprehension (H. Cho & Brutt-Griffler, 2015; Esmaeili, 2002; Plakans, 2009). In other words, it has been found that when the two skills are taught in an integrated manner, students' reading and writing abilities both improve. Miller et al. (2014) also found that reading and writing were the first two important macro-skills to be utilised in the academic context. Thus, reading and writing need to be integrated in the ESP course.

#### *7.3.3.5 Grammar subskills*

Grammar was ranked fifth, based on the correlation result in the quantitative phase. The grammar components chosen by the stakeholders include relative clauses, logical connectors, reported speech, present perfect, passive voice, present simple, past simple and other grammar points, such as parts of speech, articles and determiners. It is also important to identify and cover important grammatical phenomena to express politeness, engage in negotiation and function in cross-cultural situations. These were identified as priority areas for an ESP course, as seen in Section 7.3.3.1. Perhaps the issue of how grammar is used in a particular context or situation can be investigated for future research.



The teaching of grammar has been popular in Cambodia and other Asian EFL countries. In these contexts, grammar is commonly taught as form-focused instruction (Nourdad & Aghayi, 2014). However, to be able to communicate well in a second or foreign language, it is believed that students need instruction that focuses on both form and meaning. Form-focused grammar instruction alone, on the one hand, fails to adequately help students to communicate effectively (Ellis, 1994, 2004). An over emphasis on meaning-focused instruction, on the other hand, leaves linguistic features unnoticed (Loewen, 2003). A combination of form focus and meaning focus has widespread support and is widely accepted by linguists in EFL/ESL classrooms, in communicative language classrooms (Nassaji & Fotos, 2011; Petraki & Gunawardena, 2014). To achieve a good outcome for students, it is important for ESP course designers and instructors to be equipped with the current practices and theories in teaching grammar, so that an appropriate grammar focus be seamlessly integrated into the ESP curriculum.

#### *7.3.3.6 Listening skills*

Based on the result of the correlation coefficient presented in the quantitative phase, listening was ranked sixth as a skill needed in the ESP course. Listening skills preferred by the academic and industry stakeholders include listening strategies, comprehending messages, note-taking skills, understanding accents, understanding main ideas, listening to lectures, listening to instructions, listening for details, watching movies in English, and communicating with customers. It is logical in the EFL academic setting that students not be required to speak and listen in English, at the skill level required for reading and writing, and this is consistent with what occurs in other academic EFL contexts (Al-Tamimi & Shuib, 2010; Alastal & Shuib, 2012). However, listening and speaking skills are very important in multinational

workplace settings (Kim, 2008) as was noted by many industry stakeholders and one Biology student in the qualitative phase.

#### *7.3.3.7 Speaking skills*

Speaking was ranked seventh after listening skills. The speaking skills selected by the participants, in both the quantitative and qualitative phases include presentation, debate, group discussion, pronunciation, communicating with customers, and speech contests. Several these skills overlap with those recognised in business communication in the ESP course, and this will be discussed in the next subsection. As a complementary skill to listening, speaking is a preferred mode of communication (Palmer, 2014a). Even though speaking is regarded as a subordinate skill along with listening in the EFL academic context, it is particularly important skill in business settings (Kim, 2008). The subordinate role of speaking has been found in other studies (e.g., Al-Tamimi & Shuib, 2010; Alastal & Shuib, 2012) but, given a primary reason for having the ESP course is for students to learn and master skills that are directly applicable in workplace settings, communication skills, such as communication with customers and presentation, should be integrated into the ESP course.

#### *7.3.3.8 Business communication*

Business communication, which encompasses a number of sub-skills overlapped with the speaking sub-skills, ranked last among the eight content areas thought desirable in the ESP course. The ranked business communication topics, from the most to the least preferred, included differences in formal and informal language, language for presentation, business report writing, communication in a business meeting, conversation skills, business letter writing, business email writing, language for self-introduction, and language for telephone interactions. It is obvious that business communication ranked last. Similar to the speaking

skills, business communication might not be so applicable to students' academic context, but it is useful for students in their future jobs and useful to business and more broadly the Cambodian economy. In the business setting, the ability to comfortably participate in business communications such as business email and face-to-face and telephone communication, is essential (Evans, 2012; Kassim & Ali, 2010; Spence & Liu, 2012). Moreover, the majority of the participants responding to the interviews (73%) also supported the incorporation of business communication into the course, seeing it as important for students' future careers. It can also be assumed that business communication skills interact with cross-cultural awareness and both can be taught and practised at the same time.

#### ***7.3.4 Challenges and measures in ESP course design***

This section discusses the perceived challenges and the measures needed in helping ESP course design, particularly in a resource-limited context.

A number of challenges were raised by the participants in the two phases of the study. These challenges include English lecturers with little knowledge of students' specialty, students with low English proficiency, students with mixed English proficiency, limited teaching facilities, and the lack of teaching materials.

To address the abovementioned issues, several courses of action were suggested, some in the questionnaire responses and some by interview participants. Those measures included collaboration between the English lecturers and subject lecturers, collaborative learning and teaching between lecturers and students, developing ESP training for ESP lecturers, inviting guest speakers to provide lectures, utilising commercial textbooks, teacher-made materials, authentic materials, guest lecturer notes, placement tests, and English bridging or supplementary classes.

#### *7.3.4.1 English lecturers with little specialist knowledge*

In the quantitative phase, English lecturers who had little specialist knowledge were seen as the biggest challenge for ESP course designers. The same issue was also acknowledged by most of the interviewed English lecturers. In fact, the issue of ESP lecturers possessing little specialist or content knowledge of student specialisations is frequently discussed in the ESP literature (Basturkmen, 2010). For example, Atai and Shoja (2011) found that there was a lack of students' discipline knowledge among ESAP lecturers in a number of universities in Iran. In Cambodia, Macalister and Sou (2006) also found that English lecturers, who were competent and qualified to teach English language, did not feel confident in designing teaching materials for specialised discipline courses. While challenge of the lack of specialist subject knowledge among ESP teachers is often seen as a challenge, this view has been rejected by many ESP authors and practitioners (Macalister & Sou, 2006). Ferguson (1997), for example, argues that teachers who know the theory and practice of appropriate teaching methods, know how to help students acquire the language and they can deal with this issue.

Training is considered crucial for the implementation of a course (Markee, 1997). In the quantitative phase, many participants saw training as an effective measure to deal with English lecturers who have little knowledge of students' specialisation. In the qualitative phase, many English lecturers acknowledged their lack of confidence in teaching ESP courses. To solve this issue, many participants suggested that subject lecturers organise in-house training or workshops for the potential ESP lecturers. It was also suggested that ESP lecturers and subject lecturers work together in the design of the ESP course. Another measure was collaboration between students and English lecturers, but this measure received criticism. The English lecturers suggested that the management team distribute the workload equally to all lecturers, and they all take turns to teach ESP courses for equity purposes.

#### *7.3.4.2 Students' low English proficiency*

Students' low English proficiency is a challenge in the EFL context. In fact, the low and mixed English proficiency among EFL students is common not only in English classes in Cambodia but also throughout the world in developing countries. For example, in the context of Iranian higher education, Atai and Shoja (2011) found a large number of students with poor English proficiency in the ESP classes, and this presented a significant challenge for teaching the ESP course. This is not only the case in ESP classes; this phenomenon is also common in general English classes, throughout the world, including in Cambodia (Renaud et al., 2007). Basturkmen (2010) and Richards (2001), nonetheless, argue that in an ESP course, students must possess a high level of general English proficiency.

To assist with this challenge involving students with low and mixed English proficiency in the ESP classes, many interviewed participants recommended placement tests and a supplementary or bridging course. The idea of placement tests was thought to be important for placing the students at the right levels. At present, placement tests are implemented in a number of HEIs in Cambodia; however, the majority of HEIs have been placing their students in English classes according to their year level and specialisation, resulting in English classes with students of mixed abilities.

Morante (2012) argues that when employing appropriate methods, placement tests help students succeed in their learning. The test results also assist in establishing pre-requisite requirements for the ESP and bridging courses. Organising a bridging course for low-level students enables students to study effectively in the ESP course. Swartz and Cilliers (2013) recommend tertiary bridging course or academic programs that focus on language supplementation. A bridging course, however, consumes a lot of time and resources. In fact, in Cambodia a bridging course is feasible only for Category A universities; developing a

bridging program would be a challenge for the other three Categories of university. Another option for the course designers is to place low-level students into the general English course prior to their enrolling in the ESP course. Moreover, if the course is an elective at an intermediate level, as is the preference of most stakeholders in this study, this prevents students with a low general English proficiency from entering these classes.

#### *7.3.4.3 Teaching facilities and materials*

Teaching facilities and materials are another two challenges raised by the participants in the questionnaire responses. For teaching facilities, the interview findings revealed participants' concern about the need for modern teaching facilities, such as computer labs, for the course.

However, the biggest challenge identified by not only students and graduate employees, but also English lecturers was the selection and design of appropriate teaching materials. While students and graduate employees preferred authentic materials relating to students' specialised subjects, English lecturers wanted to adopt commercial textbooks for the course. The issue of designing ESP teaching materials was also recognised in a number of other studies. For example, Macalister and Sou (2006) found that English teachers felt reluctant to design teaching materials, although they were qualified English teachers.

Collaboration between English and subject lecturers, which was raised by many qualitative participants, included co-design of teaching materials. It was suggested that English lecturers consult with subject lecturers about the design of ESP teaching materials. Several studies also supported collaborative or co-designed teaching materials for the ESP course (Ahmed, 2014). ESP lecturers are considered the experts in language, whereas subject lecturers are the specialists in the students' specialisation. However, to work together is a big challenge for both sides. In the qualitative phase, many complained that they had busy teaching and

working schedules, so they might not have time available for designing material together.

Many English lecturers thought that teaching the ESP course would increase their workload and exert unnecessary demands. They felt strongly that the management should be aware of these issues and distribute workloads accordingly and facilitate the design process (Ahmed, 2014).

With regard to teaching materials, a number of options were introduced by the participants in both phases, including utilising commercial textbooks, teacher-made materials, authentic materials and guest speaker notes. Using commercial textbooks is convenient for ESP lecturers because books and accompanying resource materials are ready made and available. However, they might not directly reflect the students' needs and context. Perhaps a combination of commercial textbooks and subject-based teaching material can be utilised. Perhaps the government could introduce a working group to be in charge of the evaluation of ESP textbooks and material design to be located within the HEIs.

The above discussion of findings needs to be considered in ESP course design in Cambodian higher education, and also in other similar contexts. In response, section 7.4 below offers recommendations for HEIs in Cambodia.

#### **7.4 Recommendations arising from the study**

This research was primarily a case study of a Cambodian university' Faculty of Science, thus any generalisation of the findings needs to be treated with caution and care. Even so, what has been made evident in this research is typical of higher education institutions in Cambodia (see Section 3.2.3, pp. 76-78). Therefore, the recommendations offered in this section could well be considered applicable to other Science Faculties and institutions in Asia generally with similar EFL contexts but in Cambodia specifically.

Based on the widespread support given by the stakeholders of this study (see Section 7.3.1), it is evident that the ESP course should be implemented in Cambodian higher education institutions. Hence, relevant stakeholders, especially those in the English departments, should start working towards planning and collaborating on the establishment of an ESP course.

It would be worthwhile for universities to work towards designing a curriculum in support of the ESP course. This would include revision of the English subject offerings, and developing specific goals and demarcating content areas as discussed below, specifically taking into account students' needs and the Cambodian and institutional contexts. The findings of this study can be adopted or at least employed as a guide, in the design of the ESP course in the different institutions. This study can also be used as a model for conducting further regional needs analysis studies in Category A, B or other Cambodian institutions before the ESP course implementation.

This section presents recommendations for ESP course design in the context of Cambodian higher education based on the findings, and cover stakeholder recommendations and the contextual analysis of this research. The recommendations are divided into two main areas. The first addresses ESP course components describing course scope, duration, syllabus, assessment, content and materials. The second considers contextual issues in ESP course design, including ESP teacher, student and implementation.

#### ***7.4.1 ESP course scope, duration and syllabus***

##### ***7.4.1.1 The course scope***

The ESP course should be elective to allow flexibility and enable students with intermediate proficiency to select this course. In addition, the course should comprise skills instruction for



both academic and occupational purposes, which reflect students' current and anticipated future needs.

To provide a smooth transition from the current situation where general English is predominant (see Section 1.1.2, pp. 5-7), each institution or DHE could begin with an evaluation of their existing English course curricula, a review which will help avoid any ESP course content overlap with existing courses including general English and ESP courses if they exist.

#### *7.4.1.2 The course duration*

It is suggested that, for the Faculty of Science, the duration of the ESP course should be at least two semesters. Any shorter duration would not allow for coverage of the skills and topics necessary for students' various specific disciplines and sufficiently to be of value to them in their future careers. The first semester could cover mainly academic skills for students' current needs, and the second should be more focused on skills for professional purposes.

#### *7.4.1.3 The course prerequisite*

It is recommended that the pre-requisite requirement for the ESP course be intermediate level English. To gain full advantage from the ESP course, students would need to have a solid level of English language proficiency (Basturkmen, 2006, 2010; Richards, 2001). Students whose general English proficiency is lower than intermediate level should study the general English courses, or take bridging courses or additional courses offered in HEIs to reach the prerequisite level and then move into the ESP course.

#### *7.4.1.4 The course syllabus*

No single syllabus type can fully accommodate the content and teaching in the ESP course (Graves, 2008). An integrated syllabus is needed for the prospective ESP course, combining skills-based, competency-based, and task-based syllabi and also genre-based syllabi. To help students acquire and perform language skills, the tasks for the ESP course need to incorporate both pedagogical and real-world tasks, which in practice may be integrated with appropriate materials and lesson plans. While pedagogical tasks, such as a problem solving, enhance learners' language acquisition, real-world tasks, such as offering a presentation or writing reports, improve the students' confidence and language competency in the real-world setting and offer practical workplace skills.

#### *7.4.1.5 The course content*

It is highly recommended that the skills and topics covered in the ESP course be taught in an integrated manner rather than discretely. Students communicate amongst themselves more effectively when there is integration rather than in discrete instruction (Ellis, 2004; Nunan, 2004) and this would encourage peer assistance and students' independent learning. Based on the results of this research, skills and tasks can be prioritised in the following manner: cross-cultural communication, writing, vocabulary, reading, grammar, listening, speaking and business communication. There should be an integration of all language skills learning through tasks that also involve learning strategies to enhance specialised vocabulary, research, intercultural communication, and oral and written communications for professional purposes. Details regarding the specific skills and tasks of the ESP course content areas can be found in Section 7.3.3.

#### *7.4.1.6 The course assessment*

All assessments of the ESP course should directly reflect the purpose and aims of the course and be part of the syllabus design. It is recommended that a larger proportion of formative assessment than summative assessment is needed rather than what is currently the norm. While both assessment types theoretically evaluate what students have achieved from the course objectives, formative assessment is thought to enhance students' learning and assist them in developing process objectives whereas summative assessment is weaker in this respect. Examples of formative and innovative assessment include peer assessment and portfolio assessment, so these would need to be included alongside summative assessment, which would include tests and exams. A range of assessment tasks should also be designed so that student needs are adequately addressed (H. D. Brown & Abeywickrama, 2010).

#### *7.4.1.7 The course materials*

A review of the existing EAP materials in use is needed to help with any ESP materials development. Materials must suit the needs of students in the Cambodian context. In the design of ESP materials, collaboration between ESP and subject lecturers is essential. Relevant materials are needed; materials that reflect students' discipline and professional contexts should be evaluated by both sides. Subject lecturers, who are both specialists in the students' field and know students' academic needs, can collaborate with ESP lecturers and/or course designers in choosing appropriate English language teaching materials that will encourage students' skills development in ways that are consistent with the purposes of the course.

As an alternative, or with a view to using them alongside locally prepared materials, ESP course designers can evaluate and adopt commercial ESP textbooks and then progressively

work towards the design of more appropriate materials if and as needed. This process can help build English lecturers' confidence in developing ESP course materials. Equally important is the training of prospective ESP lecturers in materials development. The government would do well to assign a working group that undertakes to design a set of appropriate teaching materials for HEIs.

#### *7.4.2 ESP course contextual issues*

##### *7.4.2.1 Teacher qualification and training*

It was evident in the findings of this research that finding qualified ESP lecturers for the course is a challenge. Either English lecturers or subject lecturers are potential ESP lecturers, but it is important that ESP lecturers be supported through such as training and mentorship in the implementation of a curriculum (Graves, 2008). To organise workshops and a mentorship program, cooperation between English lecturers and subject lecturers is needed and should be encouraged, especially for the ESP course delivery in the first year. Also, the training and mentorship program should be ongoing as ESP lecturers need to stay connected with the developments in the specialised fields (Gollin-Kies et al., 2015) and aware of any updates or changes to the content of undergraduate courses in the specialised field.

##### *7.4.2.2 Student's low English proficiency*

It was clear from the findings that undergraduate students who have a low English proficiency is a potential issue in ESP course design. General English and bridging courses are needed. Students, whose placement test results are lower than the intermediate level, should attend the university's general English or English bridging courses prior to enrolling in the ESP course.

Universities themselves can determine how this could be best implemented, based on their actual circumstances. HEIs with English instruction programs for three and more semesters can have their students raise their general English proficiency through the general English program. However, HEIs with an English instruction program that is fewer than three semesters should consider assisting the low proficiency students to improve their general English through bridging or supplementary courses.

#### *7.4.2.3 Course specificity and implementation issues*

It was apparent that a discipline ESP course was considered preferable, but HEIs need to be aware of their available resources before making a commitment to this approach. To save financial and human resources, in the first stage of the prospective ESP course, a year trial of Faculty-based ESP courses is recommended. An evaluation of the trial period can offer useful and feasible suggestions for the development of other upcoming ESP courses.

During the ESP course trial period, some ESP classes could be co-taught by both ESP and subject lecturers (Chien et al., 2008). This type of implementation enhances the ESP lecturers' knowledge of the students' new discipline and also their confidence in teaching. To make this work, a clear distribution of workload for ESP lecturers is needed to avoid confusion and a positive attitude towards the collaboration by both parties.

Fortunately, Cambodian HEIs have technical training and financial support from World Bank funds that are intended for developing English for specific academic purposes curricula for their institutions, which means the funds cover ESP curriculum design. Although the funds end in late 2017, money has been allocated for designing materials that are applicable for the Cambodian students' needs and context (DHE, 2014a). Additionally, under the sponsorship of the World Bank, DHE has trained English lecturers and also provided technical support for

Cambodian HEIs as a way of assisting in the English language curriculum development for their institutions (see Section 1.1.2, pp.5-7). Given that financial support is likely to be available, there is reason to believe that HEIs have the resources to pursue the development of ESP courses as recommended; it certainly is the situation for the university that was the focus of attention in this study.

## **7.5 Limitations of the study**

Similar to other empirical research studies, the current study has encountered certain limitations. Since this study aimed to act as a needs and situation analysis model for ESP course design in the Cambodian higher education context, the discussion in this section focuses on the limitations of the research methods used (7.5.1) and of the model that has been developed from the research findings (7.5.2).

### ***7.5.1. Limitations of the methods***

The current research employed a case study approach to investigate stakeholders' perceptions of an ESP course design for the Faculty of Science at a Cambodian university. The findings from this study therefore might be considered mainly applicable to Faculty of Science graduates. This may be so, but for the current study a research site was selected which would be a good representative case for other Cambodian universities: this university is a category C university and thus resembles the majority of Cambodian HEIs which are also category C institutions (DHE, 2014b). In addition, this study employed systematic sampling techniques for both the quantitative and qualitative phases of the research to ensure that the findings reflect the actual situation of the research site. The quantitative phase, on the one hand, employed a census sampling technique for onsite participants, based on the concept of statistical representativeness. The qualitative phase, on the other hand, used a purposive

sampling technique, the decision being based on the principle of in-depth investigation but also the assurance of sufficiency and saturation of information.

Another limitation lies with the selection of industry stakeholders, which required the researcher to employ a snowball sampling technique in addition to the census sampling technique in the selection of graduate employees and employers for the participants in the quantitative phase. Not all graduate employees and employers could be contacted because their contact details had changed after their graduation. In addition, a number of contactable prospective participants refused to participate in the study. Therefore, the snowball sampling technique was used to increase the number of the industry stakeholders, where ideally a random sampling technique would have been preferable. It was simply not a feasible option for this research project.

The last limitation of the methods is the lack of other research instruments, including document analysis, expert intuitions, language audits, observation, ethnographic methods, and text-based analysis. It is acknowledged that discipline specific documents and the existing English course syllabuses could have offered broader insights into the ESP students' needs. It is anticipated that such document analysis of teaching materials and English courses would be done in the future in the different institution and this was beyond the scope of this thesis. As a practical issue, this study could not employ all the data sources; however, to triangulate the data, this study employed mixed methodology approach, combining quantitative and qualitative methods to identify the ESP needs for the undergraduate students and involving relevant stakeholders.

### *7.5.2 Limitations of the model*

The model presented in this study was built as the first attempt to draw together significant elements in a needs analysis for this context. It has several limitations that need to be recognised here. The model was built based on a detailed review of the relevant literature, other needs analysis studies and by adopting and adapting questions from other questionnaires. The model could have started with a qualitative inquiry, and then proceeded with a quantitative inquiry. This could have assisted in building the content areas and questionnaire items. However, this research identified many overlapping areas between the qualitative and quantitative phase; moreover, the qualitative phase elaborated many of the questionnaire responses. Additional items in the questionnaire (needs analysis model) could have included activities and genres, but these were not evident until the qualitative phase of this research had been completed. Notably though, additional items in the questionnaire would have made it quite long, which experienced researchers warn against (Dornyei, 2003).

In terms of application, the model is restricted to the context of English as a foreign language for undergraduate science students, although it might also be applicable to students of engineering and other technological specialisations. Particularly, the model integrates six disciplines, Biology, Chemistry, Computer Science, Environmental Science, Mathematics and Physics. Thus, course designers with a single discipline focus might need to adapt only the findings from the relevant discipline, as shown in the findings chapters. The model shows the first stage in developing an ESP course design model, which incorporates needs and situation analysis, but it might also be applicable for evaluating and possibly modifying existing ESP courses. However, this model has not yet been trialled and evaluated, which leaves a gap for researchers to embark on in the future.



## 7.6 Implications for future research

The gaps that are evident and noted in the previous section indicate several directions for future studies are suggested.

Since the current study focused on the Faculty of Science of a Cambodian university, future research should also conduct a needs and situation analysis of other faculties and at other Cambodian universities, to increase the generalisability of the current findings. Exploring stakeholders of other faculties, such as education, communication or health, may reveal specific findings about assessment and curriculum design that are appropriate for those faculties. Moreover, an investigation of stakeholder perceptions of other Cambodian higher education institutions could lead to a comparison and triangulation of the findings of the current study.

This study conducted a needs and situation analysis for the development of the ESP course: studies in the future could conduct a thorough evaluation of the developed ESP course. After the ESP curriculum is implemented, examining and evaluating the effectiveness and efficiency of the curriculum is a necessity. To do this, a number of questions should be answered:

- Is the curriculum achieving its goals?
- What is happening in the classrooms and [universities] where it is being implemented?
- Are those affected by the curriculum (e.g., teachers, administrators, students, parents, employers) satisfied with the curriculum [and what they teach]?
- Have those involved in developing and teaching [an ESP] course [appropriately taken into account all relevant factors]?

- Does the curriculum compare favourably with others of its kind? (Richards, 2001, p. 286)

## 7.7 Summary

The special and most valuable contribution of the present study is that it reveals the perceptions of both academic and industry stakeholder groups within the Cambodian higher education context about the necessity of progressing with the ESP curriculum development. It is among the first comprehensive needs and situation analyses in the context of Cambodian HEIs. The findings of this research will be presented to the Cambodian Ministry of Education, Youth and Sports for deliberation and discussion and will be available for assisting with the formation of the foundation and guidelines of the ESP course designed for and introduced into higher education institutions in the Cambodian context.

In order to maintain the quality of the ESP course after implementation, it is suggested that course evaluations be planned from the outset and implemented appropriately as part of the curriculum development cycle. In fact, this study is just the beginning of the ESP course design journey.

*“Coming together is a beginning; keeping together is progress; working together is success.”*

*Henry Ford.*

## REFERENCES

- Abuklaish, A. S. M. (2014). *Investigating the language needs of undergraduate science students in Libya*. (Doctoral thesis, University of Southampton, UK). Retrieved from <http://eprints.soton.ac.uk/374763/29.hasCoversheetVersion/Abuklaish.pdf>
- ACC. (2003). *Accreditation Committee of Cambodia*. Phnom Penh, Cambodia: Accreditation Committee of Cambodia.
- Agar, M. (1994). *Language shock: Understanding the culture of conversation*. New York, NY: William Morrow and Co.
- Ahmed, M. K. (2014). The ESP teacher: Issues, tasks and challenges. *English for Specific Purposes World*, 15(42), 1-33.
- Al-Tamimi, A. S., & Shuib, M. (2010). Investigating the English language needs of petroleum engineering students at Hadhramout University of Science and Technology. *The Asian ESP Journal*, 6(1), 6-34.
- Alastal, A. A., & Shuib, M. (2012). Investigating the academic English language target needs of undergraduates at the Faculty of Applied Science at Al-Aqsa University: Students' perceptions. *The Asian ESP Journal*, 8(2), 5-26.
- Almagro Esteban, A., & Vallejo Martos, M. C. (2002). A case study of collaboration among the ESP practitioner, the content teacher, and the students. *Revista alicantina de estudios ingleses*, 15(2002), 7-21.

- Arnó-Macià, E., & Mancho-Barés, G. (2015). The role of content and language in content and language integrated learning (CLIL) at university: Challenges and implications for ESP. *English for Specific Purposes*, 37(2015), 63-73.
- Ashuja'a, A. (2011). Book review. *Journal of English fo Academic Purposes*, 10(2011), 200-202.
- Atai, M. R., & Shoja, L. (2011). A triangulated study of academic language needs of Iranian students of computer engineering: Are the courses on track? *RELC Journal*, 42(3), 305-323.
- Bamford, J., & Day, R. R. (2003). Extensive reading activities for teaching language. Cambridge, UK: Cambridge University Press.
- Barber, C. L. (1962). Some measurable characteristics of modern scientific prose. In J. Swales (Ed.), *Episodes in ESP: A source and reference book on the development of English for science and technology* (pp. 1-16). New York, NY: Prentice Hall International.
- Barron, C. (2003). Problem-solving and EAP: themes and issues in a collaborative teaching venture. *English for Specific Purposes*, 22(3), 297-314.
- Basit, T. N. (2010). *Conducting research in educational contexts*. London, UK: Continuum.
- Basturkmen, H. (2003). Specificity and ESP course design. *RELC Journal*, 34(1), 48-63.
- Basturkmen, H. (2006). *Ideas and options in English for Specific Purposes*. Mahwah, NJ: Lawrence Erlbaum.
- Basturkmen, H. (2010). *Developing courses in English for specific purposes*. Basingstoke, UK: Palgrave Macmillan.

- Bell, J., & Gower, R. (1998). Writing course materials for the world: A great compromise. In B. Tomlinson (Ed.), *Materials development in language teaching* (pp. 116-129). Cambridge, UK: Cambridge University Press.
- Bensah, E. C., Ahiekpor, J. C., & Boateng, C. D. (2011). Migrating from subject-based to competency-based training in Higher National Diploma Chemical Engineering: The case of Kumasi Polytechnic. *Education for Chemical Engineers*, 6(3), e71-e82. doi:10.1016/j.ece.2011.04.001
- Biernacki, P., & Waldorf, D. (1981). Snowball sampling: Problems and techniques of chain referral sampling. *Sociological methods & research*, 10(2), 141-163.
- Black, P., & Williams, D. (1998). Assessment and classroom learning. *Assessment in Education*, 5(1), 7-74.
- Bosher, S., & Smalkoski, K. (2002). From needs analysis to curriculum development: Designing a course in health-care communication for immigrant students in the USA. *English for Specific Purposes*, 21(2002), 59-79.
- Bosuwon, T., & Woodrow, L. (2009). Developing a problem-based course based on needs analysis to enhance English reading ability of Thai undergraduate students. *RELC Journal*, 40(1), 42-64.
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative research journal*, 9(2), 27-40.
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA: Sage.

- Brindley, G. (1984). *Needs analysis and objective setting in the adult migrant education service*. Sydney, Australia: Adult Migrant Education Service.
- Brindley, G., & Hood, S. (1990). Curriculum innovation in adult ESL. In G. Brindley (Ed.), *The second language curriculum in action* (pp. 232-248). Sydney, Australia: National Centre for English Language Teaching and Research.
- Brown, H. D. (2004). *Language assessment : Principles and classroom practices*. New York, NY: Longman.
- Brown, H. D. (2014). *Principles of language learning and teaching: A course in second language acquisition* (Vol. Sixth). White Plains, NY: Pearson Education.
- Brown, H. D., & Abeywickrama, P. (2010). *Language assessment: Principales and classroom practices* (2nd ed.). White Plains, NY: Pearson Education.
- Brown, J. D. (1995). *The elements of language curriculum: A systematic approach to program development*. Boston, MA: Heinle & Heinle.
- Brown, J. D. (2011). Quantitative research in second language studies. In E. Hinkel (Ed.), *Handbook of research in second langauge teaching and learning* (Vol. II, pp. 190-206). New York, NY: Routledge.
- Brown, J. D., & Hudson, T. (1998). The Alternatives in language assessment. *TESOL Quarterly*, 32(4), 653-675.
- Bryman, A. (2012). *Social research methods* (4th ed.). Oxford, UK: Oxford University Press.

- Burns, A.** (2001). Genre-based approaches to writing and beginning adult ESL learners. In C. Candlin & N. Mercer (Eds.), *English language teaching in its social context: A reader* (pp. 200-207). London, UK: Routledge.
- Butt, D., Fahey, R., Feez, S., & Spinks, S. (2012). *Using functional grammar: An explorer's guide* (3rd ed.). South Yarra, Australia: Palgrave Macmillan.
- Canagarajah, A. S. (1993). Critical ethnography of a Sri Lankan classroom: Ambiguities in student opposition to reproduction through ESOL. *TESOL Quarterly*, 27(4), 601-626.
- Canale, M. (1983). From communicative competence to language pedagogy. In Jack C. Richards & R. W. Schmidt (Eds.), *Language and communicative* (pp. 2-27). London, UK: Longman.
- Canale, M., & Swain, M. (1980). Theoretical bases of communicative approaches to second language teaching and testing. *Applied linguistics*, 1(1), 1-47.
- Carter, R. (1998). Orders of reality: CANCODE, communication, and culture. *ELT Journal*, 52(1), 43-56.
- Chamnan, P., & Ford, D. (2004). Cambodian higher education: Mixed visions. In A. Philip G & T. Umakoshi (Eds.), *Asian Universities: Historical perspectives and contemporary challenges* (pp. 333-362). Baltimore, MD: The Johns Hopkins University Press.
- Chamot, A. U., & O'Malley, J. M. (1996). The cognitive academic language learning approach: A model for linguistically diverse classrooms. *The Elementary School Journal*, 96(3), 259-273.

- Chapelle, C. (2001). *Computer applications in second language acquisition*. Cambridge, UK: Cambridge University Press.
- Cheng, A. (2015). Genre analysis as a pre-instructional, instructional, and teacher development framework. *Journal of English for Academic Purposes*, 19, 125-136. doi:<http://dx.doi.org/10.1016/j.jeap.2015.04.004>
- Chew, K.-S. (2005). An investigation of the English language skills used by new entrants in banks in Hong Kong. *English for Specific Purposes*, 24(2005), 423-435.
- Chia, H.-U., Johnson, R., Chia, H.-L., & Olive, F. (1999). English for college students in Taiwan: A study of perceptions of English needs in a medication context. *English for Specific Purposes*, 18(2), 107-119.
- Chiarelott, L. (2006). *Curriculum in context: Designing curriculum and instruction for teaching and learning in context*. Belmont, CA: Thomson Wadsworth.
- Chien, C.-n., Lee, W., & Kao, L.-h. (2008). Collaborative teaching in an ESP program. *Asian EFL Journal*, 10(4), 114-133.
- Cho, H., & Brutt-Griffler, J. (2015). Integrated reading and writing: A case of Korean English language learners. *Reading in a Foreign Language*, 27(2), 242-261.
- Cho, Y., Rijmen, F., & Novák, J. (2013). Investigating the effects of prompt characteristics on the comparability of TOEFL iBT™ integrated writing tasks. *Language Testing*, 30(4), 513-534.
- Clapham, C. (2000). Assessment for academic purposes: Where next? *System*, 28(2000), 511-521.



- Clark, J. L. (1987). *Curriculum renewal in school foreign language learning*. Oxford, UK: Oxford University Press.
- Clayton, S. (2008). The problem of 'choice' and the construction of the demand for English in Cambodia. *Language Policy*, 7(2), 143-164. doi:10.1007/s10993-008-9084-9
- Clayton, T. (1995). Restructuring or resistance? Educational development in French colonial Cambodia. *Education policy analysis archives*, 3(19), 1-14.
- Clayton, T. (1998). Building the New Cambodia: Educational Destruction and Construction under the Khmer Rouge, 1975-1979. *History of Education Quarterly*, 38(1), 1-16. doi:10.2307/369662
- Clayton, T. (2000). *Education and the politics of language: Hegemony and pragmatism in Cambodia, 1979-1989*. Hong Kong: University of Hong Kong Comparative Education Research Centre.
- Clayton, T. (2002). Language choice in a nation under transition: The struggle between English and French in Cambodia. *Language Policy*, 1(1), 3-25. doi:10.1023/a:1014563027881
- Clayton, T. (2006). *Language choice in a nation under transition: English language spread in Cambodia* (1 ed. Vol. 5). New York, NY: Springer US.
- Cohen, A. D. (1998). *Strategies in learning and using a second language*. Harlow, UK: Longman.
- Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education* (7th ed.). Oxon, UK: Routledge.

- Cowling, J. D. (2006). Needs analysis: Planning a syllabus for a series of intensive workplace courses at a leading Japanese company. *English for Specific Purposes*, 26(2007), 426-442.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, CA: Sage.
- Creswell, J. W. (2011). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston, MA: Pearson.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston: Pearson Education.
- Creswell, J. W. (2014). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (5th ed.). Sydney, Australia: Pearson Australia.
- Creswell, J. W., & Plano-Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Los Angeles, CA: Sage.
- Crosling, G., & Ward, I. (2002). Oral communication: The workplace needs and uses of business graduate employees. *English for Specific Purposes*, 21(2002), 41-57.
- Davis, M. H., & Harden, R. M. (1999). AMEE Medical Education Guide No. 15: Problem-based learning: A practical guide. *Medical Teacher*, 21(2), 130-140.
- DHE. (2014a). *Report of 2nd Workshop on developing English for specific academic purposes (ESAP) curriculum in Cambodian higher education institutions*. Unpublished report. Phnom Penh, Cambodia: Department of Higher Education.

- DHE. (2014b). *Report on situation of English language education in Cambodian higher education institutions*. Unpublished report. Phnom Penh, Cambodia: Department of Higher Education.
- Dörnyei, Z. (2003). *Questionnaires in second language research: Construction, administration, and processing*. Mahwah, NJ: Lawrence Erlbaum.
- Dörnyei, Z. (2007). *Research methods in applied linguistics: Quantitative, qualitative, and mixed methodologies*. Oxford, UK:: Oxford University Press.
- Dudley-Evans, T. (2001). Editorial. *English for Specific Purposes*, 20(4), 311-312.
- Dudley-Evans, T., & St John, M. J. (1998). *Developments in English for specific purposes: A multi-disciplinary approach*. Cambridge, UK: Cambridge University Press.
- Dugan, K., & Letterman, M. (2008). Student appraisals of collaborative teaching. *College Teaching*, 56(1), 11-15.
- Easterbrook, R. M. (2013). *The process of vocabulary learning: Vocabulary learning strategies and beliefs about language and language learning*. (Doctoral thesis, University of Canberra, Australia).
- Eisner, E. (1979). *The educational imagination*. New York, NY: Macmillan.
- Eisner, E., & Vallance, E. (1974). *Conflicting conceptions of curriculum*. Berkeley, CA: McCutchan.
- Elisha-Primo, I., Sandler, S., Goldfrad, K., Ferenz, O., & Perpignan, H. (2010). Listening to students' voices: A curriculum renewal project for an EFL graduate academic program. *System*, 38(2010), 457-466.

- Ellis, R. (1994). *The study of second language acquisition*. Oxford, UK: Oxford University Press.
- Ellis, R. (2004). *Task-based language learning and teaching*. Oxford, UK: Oxford University Press.
- Esmacili, H. (2002). Integrated reading and writing tasks and ESL students' reading and writing performance in an English language test. *The Canadian Modern Language Review*, 58(4), 599-622.
- Evans, S. (2012). Designing email tasks for the Business English classroom: Implications from a study of Hong Kong's key industries. *English for Specific Purposes*, 31(2012), 202-212.
- Ewing, R. (2010). *Curriculum & assessment: A narrative approach*. South Melbourne, Australia: Oxford University Press.
- Feez, S. (1998). *Text-based syllabus design*. Sydney, Australia: National Centre for English Language Teaching and Research.
- Ferguson, G. (1997). Teacher education and LSP: The role of specialised knowledge. In R. Howard & G. Brown (Eds.), *Teacher education for LSP* (pp. 80-89). Clevedon, UK: Multilingual Matters.
- Finney, D. (2002). The ELT curriculum: A flexible model for a changing world. In J. C. Richards & W. A. Renandya (Eds.), *Methodology in language teaching: An anthropology of current practice*. Cambridge, UK: Cambridge University Press.

- Flowerdew, L. (2013). Needs analysis and curriculum development in ESP. In B. Paltridge & S. Starfield (Eds.), *The handbook of English for specific purposes*. Chichester, UK: John Wiley & Sons.
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education* (8th ed.). New York, NY: McGraw-Hill.
- Freire, P. (1972). *Pedagogy of the oppressed*. New York, NY: Herder and Herder.
- Ghahari, S., & Basanjideh, M. (2015). Dynamics of strategies-based language instruction: A study of reading comprehension and problem solving abilities via structural equation modeling. *RELC Journal*, 46(3), 237-253.
- Ghenghesh, H., Hamed, M., & Abdelfattah, Y. (2011). A study of perceptions of English needs of business students and the faculty of business at the British university in Egypt. *Arab World English Journal*, 2(1), 233-254.
- Gillham, B. (2008). *Developing a questionnaire* (2nd ed.). London, UK: Continuum International.
- Gimenez, J. (2014). Multi-communication and the business English class: Research meets pedagogy. *English for Specific Purposes*, 35(2014), 1-16.
- Gollin-Kies, S., Hall, D. R., & Moore, S. H. (2015). *Language for specific purposes*. Hampshire, UK: Palgrave Macmillan.
- Grabowski, Ł. (2015). Keywords and lexical bundles within English pharmaceutical discourse: A corpus-driven description. *English for Specific Purposes*, 38, 23-33. doi:<http://dx.doi.org/10.1016/j.esp.2014.10.004>

- Gravatt, B., Richards, J., & Lawis, M. (1997). *Language needs in tertiary studies*. Retrieved from Auckland:
- Graves, K. (2000). *Designing language courses: A guide for teachers*. London, UK: Heinle and Heinle.
- Graves, K. (2008). The language curriculum: A social contextual perspective. *Language Teaching*, 41(02), 147-181.
- Green, J., Willis, K., Hughes, E., Small, R., Welch, N., Gibbs, L., & Daly, J. (2007). Generating best evidence from qualitative research: the role of data analysis. *Australian and New Zealand journal of public health*, 31(6), 545-550.
- Habibis, D. (2010). Ethics and social research. In M. Walter (Ed.), *Social research methods* (2nd ed., pp. 89-122). South Melbourne, Australia: Oxford University Press.
- Halley, M. H., & Austin, T. Y. (2004). *Content-based second language teaching and learning*. Boston, MA: Pearson Education.
- Halliday, M. A. K., & Matthiessen, C. M. I. M. (2004). *An introduction to functional grammar* (3rd ed.). London, UK: Arnold.
- Halliday, M. A. K., & Matthiessen, C. M. I. M. (2014). *Halliday's introduction to functional grammar*. Oxon, UK: Routledge.
- Hammond, J. (1992). *English for social purposes: A handbook for teachers of adult literacy*. Sydney, Australia: NCELTR.

- Harwood, N. (2010). Issues in materials development and design. In N. Harwood (Ed.), *English language teaching materials: Theory and practice* (pp. 3-30). Cambridge, UK: Cambridge University Press.
- Herbert, A. J. (1965). The structure of technical English. In J. Swales (Ed.), *Episodes in ESP: A source and reference book on the development of English for science and technology* (pp. 17-27). New York, NY: Prentice Hall International.
- Hinkel, E. (2010). Integrating the four skills: Current and historical perspectives. In R. B. Kaplan (Ed.), *Oxford Handbook in Applied Linguistics* (2nd ed., pp. 110-126). Oxford, UK: Oxford University Press.
- Hoekje, B. J. (2007). Medical discourse and ESP courses for international medical graduates (IMGs). *English for Specific Purposes*, 26(3), 327-343.  
doi:<http://dx.doi.org/10.1016/j.esp.2006.09.002>
- Horn, B., Stoller, F. L., & Robinson, M. S. (2008). Interdisciplinary collaboration: Two heads are better than one. *English Teaching Forum*, 2, 2-13.
- Howard, R., & Brown, G. (1997). Introduction. In R. Howard & G. Brown (Eds.), *Teacher education for LSP*. Clevedon, UK: Multilingual Matters.
- Howard, R., & Brown, G. (1997). *Teacher education for languages for specific purposes*. Clevedon, UK: Multilingual Matters.
- Hughes, A. (2003). *Testing for language teachers* (2nd ed.). Cambridge, UK: Cambridge University Press.

- Huhta, M. (1999). *Language/ communication skills in industry and business: Report for Prolang, Finland*. Helsinki: Opetushallitus.
- Huhta, M., Vogt, K., Johnson, E., Tulkki, H., & Hall, D. R. (2013). *Needs analysis for language course design: A holistic approach to ESP*. Cambridge: Cambridge University Press.
- Hutchinson, T., & Waters, A. (1987). *English for specific purposes: A learning-centred approach*. Cambridge, UK: Cambridge University Press.
- Hyland, K. (2006). *English for academic purposes: An advanced resource book*. Oxon, UK: Routledge.
- Hyland, K. (2011). Disciplinary specificity: Discourse, context, and ESP. In D. Belcher, A. M. Johns, & B. Paltridge (Eds.), *New directions in English for specific purposes research* (pp. 6-24). Ann Arbor, MI: The University of Michigan Press.
- Hyland, K. (2015). Genre, discipline and identity. *Journal of English for Academic Purposes*, 19, 32-43. doi:<http://dx.doi.org/10.1016/j.jeap.2015.02.005>
- I'mACE. (2014). Education reform, English language learning and the ASEAN community. Retrieved 29 July 2016, from I'mACE <http://www.moeys.gov.kh/en/minister-page/education-reform,-english-language-learning-and-the-asean-community.html> - [.V5s\\_0hTArw8](http://www.moeys.gov.kh/en/minister-page/education-reform,-english-language-learning-and-the-asean-community.html)
- IELTS. (2016). Test format in detail. Retrieved from <https://www.ielts.org/about-the-test/test-format-in-detail>



- ITC. (2016). About Institute of Technology of Cambodia. Retrieved from <http://www.itc.edu.kh/en/index.php/about/overview.html>
- Jackson, L., Meyer, W., & Parkinson, J. (2006). A study of the writing tasks and reading assigned to undergraduate science students at a South African University. *English for Specific Purposes*, 25(2006), 260-281.
- Jacobs, G. M., & Farrell, T. S. (2003). Understanding and implementng the CLT (Communicative Language Teaching) paradigm. *RELC Journal*, 34(1), 5-30.
- Johns, A. M. (1988). The discourse communities dilemma: Identifying transferable skills for the academic milieu. *English for Specific Purposes*, 7(1), 55-59.
- Johns, A. M. (2013). The history of English for specific purposes research. In B. Paltridge & S. Starfield (Eds.), *The handbook for specific purposes* (pp. 5-30). West Sussex, UK: John Wiley & Sons.
- Johns, A. M., & Makalela, L. (2011). Needs analysis, critical ethnography, and context: Perspectives from the client and the consultant. In D. Belcher, A. M. Johns, & B. Paltridge (Eds.), *New directions in English for specific purposes research* (pp. 197-221). Melden, MA: The University of Michigan Press.
- Johns, T. F., & Dudley-Evans, A. (1980). An experiment in team-teaching of overseas prostgraduate students of transportation and plant biology. In J. Swales (Ed.), *Episodes in ESP: A source and reference book on the development of English for science and technology* (pp. 137-155). New York, NY: Prentice Hall International.
- Jordan, R. R. (1997). *English for academic purposes: A guide and resource book for teachers*. Cambridge, UK: Cambridge University Press.

- Kandil, A. (2009). Needs analysis and the Arab learners. *TESOL Arabia, Special Interest Groups*, LI-SIG Archives. Retrieved from <http://ilearn.20m.com/research/needs.htm>.
- Kassim, H., & Ali, F. (2010). English communication events and skills needed at the workplace: Feedback from the industry. *English for Specific Purposes*, 29(2010), 168-182.
- Kea, L., Meng, C., & Keuk, C. N. (2015). Cambodian ELT university practitioners' use of standardized tests for practice and assessment. *Language education in Asia*, 6(1), 4-6.
- Kim, D. (2008). *English for occupational purposes: One language?* London, UK: Continuum.
- Kirkpatrick, A. (2010). Learning English in ASEAN: Myths and principles. *Language education in Asia*, 1(1), 1-7.
- Kirkpatrick, A. (2012). English in ASEAN: Implications for regional multilingualism. *Journal of Multilingual and Multicultural Development*, 33(4), 331-344. doi:10.1080/01434632.2012.661433
- Kohonen, V. (1999). Authentic assessment in affective foreign language education. In J. Arnold (Ed.), *Affective language learning* (pp. 279-294). Cambridge, UK: Cambridge University Press.
- Korm, R. (2011). *The relationship between pay and performance in the Cambodian civil service*. Doctoral thesis, Victoria University, Australia. Retrieved from [http://www.canberra.edu.au/researchrepository/file/5aea8cba-27ff-e2e7-d368-62bedc4f79bb/1/full\\_text.pdf](http://www.canberra.edu.au/researchrepository/file/5aea8cba-27ff-e2e7-d368-62bedc4f79bb/1/full_text.pdf)

- Krahnke, K. (1987). *Approaches to syllabus design for foreign language teaching*. Washington, DC: Center for Applied Linguistics.
- Krashen, S. (1989). We acquire vocabulary and spelling by reading: Additional evidence for the input hypothesis. *The Modern Language Journal*, 73(4), 440-464.  
doi:10.2307/326879
- Krashen, S. D. (1992). *The input hypothesis: Issues and implications*. Torrance, CA : Laredo Pub. Co.
- Kumar, R. (2011). *Research methodology: A step-by-step guide for beginners* (3rd ed.). London, UK: Sage.
- Kumar, R. (2014). *Research methodology: A step-by-step guide for beginners* (4th ed.). London, UK: Sage.
- Kumari, P., & Rahman, M. M. (2012). A needs analysis of underprivileged technical students at Indian School of Mines, Dhandad, Indian. *The Asian ESP Journal*, 8(4), 93-124.
- Kvale, S., & Brinkmann, S. (2008). *Interviews: Learning the craft of qualitative research interviewing*. London, UK: Sage.
- Lackstorm, J. E., Selinker, L., & Trimble, L. P. (1972). Grammar and technical English. In J. Swales (Ed.), *Episodes in ESP: A source and reference book on the development of English for science and technology* (pp. 58-68). New York, NY: Prentice Hall International.
- Lee, K. R., & Oxford, R. (2008). Understanding EFL learners' strategy use and strategy awareness. *Asian EFL Journal*, 10(1), 7-32.

- Lehtonen, T., & Karjalainen, S. (2008). University graduates' workplace language needs as perceived by employers. *System*, 36(492-503), 492.
- Liang, A., & Chen, Y. (2011). A case study of college English curriculum design under the social needs analysis. *Studies in Literature and Language*, 3(3), 1-5.
- Lien, H.-Y. (2011). EFL learners' reading strategy use in relation to reading anxiety. *Language education in Asia*, 2(2), 199-212.
- Lim, S. (2016). Learning to Teach Intelligible Pronunciation for ASEAN English as a Lingua Franca: A Sociocultural Investigation of Cambodian Pre-service Teacher Cognition and Practice. *RELC Journal*, 47(3), 313-329.
- Lo, Y. Y. (2014). Collaboration between L2 and content subject teachers in CBI: Contrasting beliefs and attitudes. *RELC Journal*, 45(2), 181-196.
- Lodico, M. G., Spaulding, D. T., & Voegtle, K. H. (2010). *Methods in educational research: From theory to practice* (2nd ed.). San Francisco, CA: John Wiley & Sons.
- Loewen, S. (2003). Variation in the frequency and characteristics of incidental focus on form. *Language Teaching Research*, 7(3), 315-345. doi:10.1191/1362168803lr129oa
- Long, M. H. (2005). Methodological issues in learner needs analysis. In M. H. Long (Ed.), *Second language needs analysis* (pp. 19 - 76). Cambridge, UK: Cambridge University Press.
- Lyster, R., & Ballinger, S. (2011). Content-based language teaching: Convergent concerns across divergent contexts. *Language Teaching Research*, 15(3), 279-288.

- Mab, T. (2015). The current ELT educational practice in Cambodia. In T. W. Bigalke & S. Sharbawi (Eds.), *English for ASEAN Integration: Policies and practices in the region* (pp. 15-21). Brunei: Universiti Brunei Darussalam.
- Macalister, J. (2007). Square pegs and round holes: Getting started in the ESP classroom. *Guidelines*, 9(1), 37-41.
- Macalister, J. (2013). *Review of English language programmes at ELSU, Royal University of Phnom Penh*. Phnom Penh, Cambodia.
- Macalister, J., & Sou, B. (2006). English for science and technology in Cambodia: An exercise in course design. *Guidelines*, 28(2), 9-12.
- Mackey, A., & Gass, S. M. (2005). *Second language research: Methodology and design*. Mahwah, NJ: Lawrence Erlbaum.
- Markee, N. (1997). *Managing curricular change*. Cambridge: Cambridge University Press.
- Martin, J. N., & Nakayama, T. K. (2013). *Intercultural communication in contexts* (6th ed.). New York, NY: McGraw-Hill.
- Martín, P., & León Pérez, I. K. (2014). Convincing peers of the value of one's research: A genre analysis of rhetorical promotion in academic texts. *English for Specific Purposes*, 34, 1-13. doi:<http://dx.doi.org/10.1016/j.esp.2013.09.002>
- Mazdayasna, G., & Tahririan, M. (2008). Developing a profile of the ESP needs of Iranian students: The case of students of nursing and midwifery. *Journal of English for Academic Purposes*, 7(4), 277-289.

- Mihai, F. (2012). *Assessing English language learners in the content areas: A research into practice guide for educators*. Ann Arbor, MI: University of Michigan Press.
- Miller, B., McCardle, P., & Long, R. (2014). *Teaching reading and writing: Improving instruction and student achievement*. Retrieved from <http://CANBERRA.eplib.com.au/patron/FullRecord.aspx?p=1787417>
- Minh, L. L. (2013). Educating the next generation of workforce: ASEAN perspectives on innovation, integration and English. Retrieved 27 July 2015, from ASEAN Secretariat <http://www.asean.org/news/item/keynote-address-by-he-le-luong-minh-secretary-general-of-asean-at-the-british-council-conference-on-educating-the-next-generation-of-workforce-asean-perspectives-on-innovation-integration-and-english-24-june-2013-bangkok-thailand-2>
- MoEYS. (2014). Policy on higher education vision 2030. Retrieved 18 November 2016, from MoEYA <https://drive.google.com/file/d/0B1ekqZE5ZIUJSVhjN2E2UFJBQVU/view>
- Moore, S. H., & Bounchan, S. (2010). English in Cambodia: Changes and challenges. *World Englishes*, 29(1), 114-126.
- Morante, E. A. (2012). Editorial: What do placement tests measure? *Journal of Developmental Education*, 35(3), 28.
- Morgan, G. A., Leech, N. L., Gloeckner, G. W., & Barrett, K. C. (2004). *SPSS for introductory statistics: Use and interpretation* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum.
- Moslemi, F. (2011). ESP needs analysis of Iranian MA students: A case study of the University of Isfahan. *English Language Teaching*, 4(4), 121-129.

- Nassaji, H., & Fotos, S. S. (2011). *Teaching grammar in second language classrooms: Integrating form-focused instruction in communicative context*. Retrieved from <http://CANBERRA.ebib.com.au/patron/FullRecord.aspx?p=667832>
- Nation, I. S. P., & Macalister, J. (2010). *Language curriculum design*. New York, NY: Routledge.
- Nation, P. (2007). The four strands. *International Journal of Innovation in Language Learning and Teaching*, 1(1), 2-13.
- Nguyen, L. T. C., & Gu, Y. (2013). Strategy-based instruction: A learner-focused approach to developing learner autonomy. *Language Teaching Research*, 17(1), 9-30.
- Nickerson, C. (2013). English for specific purposes and English as a lingua franca. In B. Paltridge & S. Starfield (Eds.), *The handbook of English for specific purposes* (pp. 445-460). Chichester, UK: John Wiley & Sons.
- Nourdad, N., & Aghayi, E. T. (2014). Focus on form in teaching passive voice in different tenses. *Procedia - Social and Behavioral Sciences*, 98(2014), 1400 - 1408.
- Nunan, D. (1988). *Syllabus design*. Oxford, UK: Oxford University Press.
- Nunan, D. (2004). *Task-based language teaching*. Cambridge, UK: Cambridge University Press.
- Oliver, P. (Ed.) (2006) *The SAGE dictionary of social research methods*. London, UK: Sage.
- Oliver, R., Grote, E., Rochecouste, J., & Exell, M. (2013). Needs analysis for task-based language teaching: A case study of indigenous vocational education and training students who speak EAL/EAD. *TESOL in Context*, 22(2), 36-50.

- Orr, T. (1995). Studying the professions we serve. *ESP News*, 4(2), 11.
- Orr, T. (2010). English language education for science and engineering students. In M. F. Ruiz-Garrido, J. C. Palmer-Silveira, & I. Fortanet-Gomez (Eds.), *English for professional and academic purposes* (pp. 213-231). New York, NY: Amsterdam.
- Palmer, E. (2014a). *Teaching the core skills of listening and speaking*. Alexandria, VA: ASCD.
- Palmer, E. (2014b). *Teaching the Core Skills of Listening and Speaking* Retrieved from <http://CANBERRA.ebib.com.au/patron/FullRecord.aspx?p=1681154>
- Paltridge, B., & Starfield, S. (2013a). *The handbook of English for specific purposes*. West Sussex, UK: John Wiley & Sons.
- Paltridge, B., & Starfield, S. (2013b). Introduction. In B. Paltridge & S. Starfield (Eds.), *The handbook of English for specific purposes* (pp. 1-4). West Sussex, UK: John Wiley & Sons.
- Parkinson, J. (2013). English for science and technology. In B. Paltridge & S. Starfield (Eds.), *The handbook of English for specific purposes* (pp. 155-174). West Sussex, UK: John Wiley & Sons.
- Patman, P. (2010). Using SPSS for quantitative analysis. In M. Walter (Ed.), *Social research methods* (2nd ed., pp. 243-284). South Melbourne, Australia: Oxford University Press.
- Pecorari, D., Shaw, P., Irvine, A., & Malmstrom, H. (2011). English for Academic Purposes at Swedish universities: Teachers' objectives and practices. *Iberica*, 22(2011), 55-78.



- Petraki, E., & Gunawardena, M. (2014). *A tale of two cities: Investigating teachers' and students' beliefs on grammar pedagogy in English language teaching*. In E. Espindola & A. Kumar Kashyap (Eds). Proceedings of the 7th International Free Linguistics Conference (pp.116-122). Hong Kong: The Hong Kong Polytechnic University. Retrieved from <http://www.flcgroup.net/wp-content/uploads/Proceedings-of-the-Free-Linguistics-Conference-2013.pdf> - page=132.
- Plakans, L. (2009). The role of reading strategies in integrated L2 writing tasks. *Journal of English for Academic Purposes*, 8(2009), 252-266.
- Rany, S., Zain, A. N. M., & Jamil, H. (2012). Cambodia's higher education development in historical perspective (1863-2012). *International Journal of Learning & Development*, 2(2), 224-241.
- Read, J., & Chapelle, C. A. (2001). A framework for second language vocabulary assessment. *Language Testing*, 18(1), 1-32.
- Reinders, H., & White, C. (2010). The theory and practice of technology in materials development and task design. In N. Harwood (Ed.), *English language teaching materials: Theory and practice* (pp. 58-80). Cambridge, UK: Cambridge University Press.
- Remenyi, D. (2012). *Case study research*. Reading, UK: Academic Publishing.
- Renaud, S., Tannenbaum, E., & Stantial, P. (2007). Student-centered teaching in large classes with limited resources. *English Teaching Forum*, 55(3), 12-34.
- Richards, J. C. (2001). *Curriculum development in language teaching*. Cambridge, UK: Cambridge University Press.

- Richards, J. C. (2013). Curriculum approaches in language teaching: Forward, central, and backward design. *RELC Journal*, 44(1), 5-33.
- Richards, J. C., & Rodgers, T. S. (2001). *Approaches and methods in language teaching* (2nd ed.). Cambridge, UK: Cambridge University Press.
- Richards, J. C., & Rodgers, T. S. (2015). *Approaches and methods in language teaching* (Vol. Third). New York, NY: Cambridge University Press.
- Roberts, C. (1998). Awareness in intercultural communication. *Language Awareness*, 7(2), 109-127.
- Robertson, S. (2003). WTO/GATS and the global education services industry. *Globalisation, Societies and Education*, 1(3), 259-266.
- RUPP. (2014). *Strategic plan 2014-2018*. Phnom Penh, Cambodia: Royal University of Phnom Penh.
- RUPP. (2015). English Language Support Unit. Retrieved from <http://www.rupp.edu.kh/center/elsu>
- RUPP. (2017a). Biology. from Royal University of Phnom Penh <http://www.rupp.edu.kh/fs/biology/?page=Introduction>
- RUPP. (2017b). Chemistry. Retrieved 10 April 2017, from RUPP <http://www.rupp.edu.kh/fs/chemistry/?page=Introduction>
- RUPP. (2017c). Computer science. Retrieved 10 April 2017, from RUPP [http://www.rupp.edu.kh/fs/computer\\_science/?page=Introduction](http://www.rupp.edu.kh/fs/computer_science/?page=Introduction)

RUPP. (2017d). Environmental Science. Retrieved 11 April 2017, from RUPP [http://www.rupp.edu.kh/fs/environmental\\_science/?page=Background](http://www.rupp.edu.kh/fs/environmental_science/?page=Background)

RUPP. (2017e). Mathematics. Retrieved 11 April 2017, from RUPP <http://www.rupp.edu.kh/fs/mathematics/?page=Introduction>

RUPP. (2017f). Physics. Retrieved 11 April 2017, from RUPP <http://www.rupp.edu.kh/fs/physics/?page=Introduction>

Saroeun, M. (2015). Education and policy on English language in Cambodia. In T. W. Bigalke & S. Sharbawi (Eds.), *English for Asean integration: Policies and practices in the region* (pp. 22-31). Brunei: Universiti Brunei Darussalam.

Schwab, J. J. (1983). The practical 4: Something for curriculum professors to do. *Curriculum inquiry*, 13(3), 239-265.

Secretariat, A. (2008). ASEAN economic community blueprint. Jakarta, Indonesia: ASEAN Secretariat.

Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. New York, NY: Teachers College Press.

Shanahan, T., & Lomax, R. G. (1986). An analysis and comparison of theoretical models of the reading writing relationship. *Journal of Educational Psychology*, 78(2), 116-123.

Smith, A. F. V., & Thondlana, J. (2015). The EAP competencies in a group case study project as revealed by a task analysis. *Journal of English fo Academic Purposes*, 20(2015), 14-27.

- So-mui, F. L., & Mead, K. (2000). An analysis of English in the workplace: The communication needs of textile and clothing merchandisers. *English for Specific Purposes, 19*(2000), 351-368.
- Spack, R. (1988). Initiating ESL students into the academic discourse community: How far should we go? *TESOL Quarterly, 22*(1), 29-51.
- Spence, P., & Liu, G.-Z. (2012). Engineering English and the high-tech industry: A case study of an English needs analysis of process integration engineers at a semiconductor manufacturing company in Taiwan. *English for Specific Purposes, 32*(2013), 97-109.
- Stoller, F. L. (1997). The catalyst for change and innovation. In M. A. Christison & F. L. Stoller (Eds.), *A handbook for language program administrators* (pp. 33-48). Burlingame, CA: Alta Book Center.
- Stoller, F. L. (2004). Content-based instruction: Perspectives on curriculum planning. *Annual Review of Applied Linguistics, 2004*(24), 261-283.
- Stroupe, R. (2013). The language educator and globalisation: How do we best prepare our learners? *Language education in Asia, 4*(2), 110-121.
- Swales, J. (1971). Writing scientific English. In J. Swales (Ed.), *Episodes in ESP: A source and reference book on the development of English for science and technology* (pp. 37-44). New York, NY: Prentice Hall.
- Swales, J. (1988a). Introduction. In J. Swales (Ed.), *Episodes in ESP: A source and reference book on the development of ESP for Science and Technology* (pp. xiii-xvii). New York, NY: Prentice Hall.

- Swales, J. (1988b). Introduction. In J. Swales (Ed.), *Episodes in ESP: A source and reference book on the development of English for science and technology* (pp. xiii-xvii). New York, NY: Prentise Hall International.
- Swartz, J. o. J., & Cilliers, C. D. (2013). The integration of language and thinking skills in a bridging course for pre-university students at the Military Academy. *A Journal of Language Learning*, 8(1), 52-61.
- Tao, N. (2014). *Development and validation of classroom assessment literacy scales: English as a foreign language (EFL) instructors in a Cambodian higher education setting*. (Doctoral thesis, Victoria University, Australia). Retrieved from [http://vuir.vu.edu.au/25850/1/Nary\\_Tao.pdf](http://vuir.vu.edu.au/25850/1/Nary_Tao.pdf)
- Taylor, S. S. (2007). Comments on lab reports by mechanical engineering teaching assistants. *Journal of business and technical communication*, 21(4), 402-424.
- Teddlie, C., & Yu, F. (2007). Mixed methods sampling: A typology with examples. *Journal of mixed methods research*, 1(1), 77-100.
- Travers, M. (2010). Qualitative interviewing methods. In M. Walter (Ed.), *Social research methods* (2nd ed., pp. 287-321). South Melbourne, Australia: Oxford University Press.
- Tudor, I. (1997). LSP or language education. In R. Howard & G. Brown (Eds.), *Teacher education for LSP* (pp. 90-102). Clevedon, UK: Multilingual Matters.
- UHS. (2016). University of Health Sciences. Retrieved from <http://www.uhs.edu.kh/index.php>

- Ur, P. (2012). *A course in English language teaching*. Cambridge, UK: Cambridge University Press.
- Vaus, D. d. (2002). *Surveys in social research* (5th ed.). London: Routledge.
- Vo, T. H. L., Wyatt, M., & McCullagh, M. (2016). Exploring the gap between Vietnamese workplace communication in English and English language teaching at a university. *The Asian ESP Journal*, 12(1), 8-38.
- Voogt, J., Westbroek, H., Handelzalts, A., Walraven, A., McKenney, S., Pieters, J., & De Vries, B. (2011). Teacher learning in collaborative curriculum design. *Teaching and Teacher Education*, 27(8), 1235-1244.
- Walter, M. (2010). Surveys. In M. Walter (Ed.), *Social research methods* (2nd ed., pp. 151-182). South Melbourne, Australia: Oxford University Press.
- Waters, A., & Vilches, M. L. C. (2001). Implementing ELT innovations: A needs analysis framework. *ELT Journal*, 52(2), 133 - 141.
- Wedell, M. (2009a). Innovation in ELT. *ELT Journal*, 63(4), 397 - 399.  
doi:10.1093/elt/ccp053
- Wedell, M. (2009b). *Planning for educational change: putting people and their contexts first*. London: New York, NY: Continuum.
- Wiles, J. (2009). *Leading curriculum development*. Thousand Oaks, CA: Corwin Press.
- Willis, K. (2010). Analysing qualitative data. In M. Walter (Ed.), *Social research methods* (2nd ed., pp. 407-436). South Melbourne, Australia: Oxford University Press.

- Wu, H., & Badger, R. G. (2008). In a strange and uncharted land: ESP teachers' strategies for dealing with unpredicted problems in subject knowledge during class. *English for Specific Purposes*, 28(2009), 19-32.
- Xiao, H., & Petraki, E. (2007). An investigation of Chinese students' difficulties in intercultural communication and its role in ELT. *Journal of Intercultural Communicaiton*(13), 1-17.
- Xie, Q., & Adamson, B. (2015). How effective is workplace English for Occupational Purposes (EOP) training? Case studies of corporate programs in the Chinese context. *The Asian ESP Journal*, 11(1), 151-184.
- Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Los Angeles, CA: Sage.
- Zhang, Y. (2009). Reading to speak: Integrating oral communication skills. *English Teaching Forum*, 47(1), 32-34.
- Zohrabi, M. (2011). An evaluation of the needs analysis component in an academic setting. *Asian EFL Journal*, 7(4), 153-182.

## APPENDICES

### APPENDIX A: Participant information form (English version)

Project Title
A needs analysis study for the development of English for undergraduate specialisation courses: A case study of a Cambodian university
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Project Aim
The overall aim of the present study is to investigate stakeholders' perceptions for the development of an English for specific/professional purposes (ESP) curriculum for the undergraduate students in Cambodia. The findings from this research will be used to provide recommendations for developing an ESP curriculum in RUPP and for other Cambodian higher education institutions that wish to integrate an ESP course into their undergraduate program.
Benefits of the Project
This study addresses the gap in ESP research by conducting a comprehensive needs analysis and situation analysis on English language skills for students at the tertiary undergraduate level. Specifically, this study attempts to address this gap by offering a model in needs and situation analysis to assist in the design of ESP courses in the Cambodian higher education context.
General Outline of the Project
This study will employ an explanatory mixed methods case study approach combining both quantitative and qualitative methods. In the quantitative phase, survey questionnaires will be distributed to stakeholders, namely academic and industry stakeholders (N=500) at RUPP. This will be followed by semi-structured interviews with volunteer participants (N=30).
Participant Involvement
If you agree to participate in this study, you will be asked to read the participant information sheet and then read and sign the consent form. Then you will be asked to complete the questionnaire investigating your perceptions about the need for developing courses of English for RUPP Faculty of Science undergraduate students' specialization, and information on their duration, syllabus, the content of the course and challenges in developing these courses. It will take you approximately 20 minutes to complete the questionnaire. You may return the complete questionnaire when you finish to the researcher or return it to the researcher office 113A building A of the Royal University of Phnom Penh any time during office working hours (Monday to Thursday:



8:00 – 12:00; 14:00 – 17:00 and Friday: 8:00 – 12:00).

We would also like to invite you to participate in an interview, to obtain more detailed information on student professional needs. The interview will take about 30 minutes with the researcher with any of your convenient time, please fill out your name and contact phone number at the final section of the questionnaire.

Please be informed that the participation in this research is completely voluntary. You may refuse to participate or withdraw at anytime without any penalty and without feeling any discomfort.

There is no anticipated risk involved in this research. However, you are encouraged to ask any questions or concerns you may have about the research to the researcher and/or his supervisors.

#### Confidentiality

Your identity you will provide in this research will be kept completely confidential. The outcomes of this research will be a Masters thesis and/or publications. However, your personal information will be completely removed in any such reports.

#### Anonymity

The information you will provide will be presented anonymously in all reports. Your personal information in the questionnaire will be coded and your name in the interview will be replaced by a pseudonym. Therefore, your personal identity such as your name can only be identified by the researcher and his supervisors.

#### Data storage

All information obtained in this study will be securely stored in a password-protected computer during the project, and then be retained at the University of Canberra for five years period after the completion of the research. The information, according to the university policy, will be destroyed to ensure that the information is no longer usable.

#### Ethics Committee Clearance

The project has been approved by the University of Canberra's Human Research Ethics Committee.

#### Queries and Concerns

If you have any queries and/or concerns about the research, please do not hesitate to contact the researcher and/or his supervisors, whose contact details are mentioned above.

**APPENDIX B: Participant information form (Khmer version)**

**សំណុំបែបបទព័ត៌មានអ្នកចូលរួម**

ចំណងជើងគម្រោង
ការសិក្សាតម្រូវការ និងការវិភាគស្ថានភាពសម្រាប់ការអភិវឌ្ឍកម្មវិធីសិក្សាភាសាអង់គ្លេសESP ក្នុងបរិបទឧត្តមសិក្សាកម្ពុជា

អ្នកស្រាវជ្រាវ
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សាស្ត្រាចារ្យណែនាំ ទី១
បណ្ឌិត អេលេនី ជេតត្រាគី
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គោលបំណងរបស់គម្រោង
ដើម្បីជួយដោះស្រាយបញ្ហា និងរួមចំណែកបំពេញនូវតម្លាភាពការស្រាវជ្រាវក្នុងវិស័យអប់រំ ភាសាអង់គ្លេសESP ការសិក្សានេះបានធ្វើការវិភាគតម្រូវការ ក្នុងគោលបំណងដើម្បីធ្វើការស៊ើបអង្កេតទស្សនៈភាគីពាក់ព័ន្ធអំពីជំនាញភាសាអង់គ្លេសESP សម្រាប់និស្សិតមហាវិទ្យាល័យវិទ្យាសាស្ត្រនៅក្នុងសាកលវិទ្យាល័យកម្ពុជាមួយ។ ជាពិសេសការសិក្សានេះមានគោលបំណងផ្តល់គំរូវិភាគតម្រូវការ និងស្ថានភាពដើម្បីភិវឌ្ឍកម្មវិធីសិក្សាភាសាអង់គ្លេសESP ក្នុងបរិបទឧត្តមសិក្សាកម្ពុជា។ ការរកឃើញនៃការស្រាវជ្រាវនេះនឹងផ្តល់អនុសាសន៍សម្រាប់គ្រឹះស្ថានឧត្តមសិក្សាក្នុងប្រទេសកម្ពុជា និងបណ្តាប្រទេសផ្សេងទៀតដែលមានបរិបទស្រដៀងគ្នា។

អត្ថប្រយោជន៍នៃគម្រោង
ការស្រាវជ្រាវនេះបានជួយបំពេញតម្លាភាពក្នុងការស្រាវជ្រាវវិស័យអប់រំភាសាអង់គ្លេសESP ដោយធ្វើការវិភាគតម្រូវការ និងស្ថានភាពជំនាញភាសាអង់គ្លេសសំរាប់និស្សិតកម្រិត បរិញ្ញាបត្រ។

ជាពិសេស, ការស្រាវជ្រាវនេះព្យាយាមបំពេញគម្លាតនេះ ដោយការផ្តល់នូវ គំរូម៉ូដែលមួយនៃការវិភាគតម្រូវការ និងស្ថានភាព ដើម្បីជួយ អភិវឌ្ឍកម្មវិធីសិក្សាភាសា អង់គ្លេសESP ក្នុងបរិបទឧត្តមសិក្សាកម្ពុជា។

**គ្រោងទូទៅនៃគម្រោង**

ការសិក្សានេះនឹងប្រើប្រាស់វិធីសាស្ត្រស្រាវជ្រាវពន្យល់ចម្រុះ ( explanatory mixed methods ) រួមបញ្ចូលគ្នារវាងវិធីសាស្ត្របរិមាណ និងគុណភាព។ នៅក្នុងដំណាក់កាល បរិមាណកម្រងសំណួរស្វែងរកនឹងត្រូវចែកជូនអ្នកពាក់ព័ន្ធរួមមាន និស្សិត សាស្ត្រាចារ្យ នៅសាកលវិទ្យាល័យភូមិន្ទភ្នំពេញ និងនិយោជកនិយោជិតកំពុងបំពេញការងារ (N=500) ។ អ្នកស្រាវជ្រាវ នឹងបន្តការស្រាវជ្រាវដោយសម្ភាសន៍ជាមួយអ្នកចូលរួមស្ម័គ្រចិត្ត (N=30) ។

**សំរាប់អ្នកចូលរួម**

ប្រសិនបើអ្នកយល់ព្រមចូលរួមក្នុងការសិក្សានេះ សូមអានសំណុំបែបបទព័ត៌មាន របស់អ្នកចូលរួមបន្ទាប់មកសូមអាន និងចុះហត្ថលេខាលើសំណុំបែបបទនៃការយល់ព្រម។ បន្ទាប់មកសូមអ្នកជួយបំពេញកម្រងសំណួរស្តីពីការយល់ឃើញរបស់អ្នកអំពីតម្រូវការចាំបាច់សម្រាប់ការអភិវឌ្ឍវគ្គសិក្សាភាសាអង់គ្លេស សម្រាប់ជំនាញនិស្សិតបរិញ្ញាបត្រមហា វិទ្យាល័យវិទ្យាសាស្ត្រ នៅសាកលវិទ្យាល័យភូមិន្ទភ្នំពេញ រួមមានព័ត៌មានទាក់ទងអំពី ថិរវេលា មាតិការបស់ វគ្គសិក្សា និងបញ្ហាប្រឈមផ្សេងៗក្នុងការអភិវឌ្ឍវគ្គសិក្សាទាំងនេះ។

អ្នកនឹងចំណាយពេល ប្រហែល២០នាទី ដើម្បីបំពេញកម្រងសំណួរ។ អ្នកអាចប្រគល់ កម្រងសំណួរដែលបំពេញរួចដល់អ្នកស្រាវជ្រាវផ្ទាល់ ឬ ប្រគល់កម្រងសំណួរទៅកាន់បន្ទប់ ១១៣A អាគារA ការិយាល័យអ្នកស្រាវជ្រាវនៅ សាកលវិទ្យាល័យភូមិន្ទភ្នំពេញរាល់ម៉ោង ធ្វើការចាប់ពី ថ្ងៃច័ន្ទ ដល់ព្រហស្បតិ៍ ម៉ោង ៨:០០ - ១២:០០ និង ១៤: ០០ - ១៧:០០ និងថ្ងៃសុក្រ ម៉ោង ៨:០០ - ១២:០០។

សំរាប់និស្សិតបញ្ចប់ការសិក្សានៅសាកលវិទ្យាល័យ ភូមិន្ទភ្នំពេញ សូមអ៊ីម៉ែលកម្រងសំណួរបំពេញរួចទៅកាន់ [korop.khat@canberra.edu.au](mailto:korop.khat@canberra.edu.au) ។

សូមអញ្ជើញចូលរួមនៅក្នុងបទសម្ភាសន៍មួយដើម្បីទទួលបានព័ត៌មានលម្អិតបន្ថែមទៀត ទៅលើតម្រូវការភាសាអង់គ្លេសសម្រាប់ជំនាញវិជ្ជាជីវៈរបស់និស្សិតបរិញ្ញាបត្រនៅសាកលវិទ្យាល័យភូមិន្ទភ្នំ ពេញ។ សំរាប់បទសម្ភាសន៍នេះអ្នកនឹងចំណាយពេល ប្រហែល៣០នាទី ក្នុងពេលវេលាណាមួយដែលងាយស្រួលសម្រាប់អ្នក។ សូមបំពេញឈ្មោះនិងលេខទូរស័ព្ទ ទំនាក់ទំនងរបស់អ្នក នៅក្នុងផ្នែកចុងក្រោយនៃកម្រងសំណួរ។

សូមជំរាបជូនថាការចូលរួមនៅក្នុងការស្រាវជ្រាវនេះគឺជាការស្ម័គ្រចិត្ត។ អ្នកអាច បដិសេធមិនចូលរួម ឬដកខ្លួនចេញបានគ្រប់ពេលវេលាដោយគ្មានការពិន័យ ហើយពុំមាន ការប៉ះពាល់ដល់អារម្មណ៍។

អ្នកចូលរួមពុំមានការរំពឹងទុក នឹងការប្រឈមជាមួយហានិភ័យណាមួយក្នុងការចូលរួម ការស្រាវជ្រាវនេះ។ ទោះជាយ៉ាងនេះក្តី អ្នកត្រូវបានលើកទឹកចិត្តឱ្យសួរសំណួរ ឬ បង្ហាញ ពីការព្រួយបារម្ភ ដែលអ្នកមាន ចំពោះការស្រាវជ្រាវនេះទៅកាន់អ្នកស្រាវជ្រាវ ឬ សាស្ត្រាចារ្យណែនាំ។

**ការរក្សាការសំងាត់**  
 អត្តសញ្ញាណរបស់អ្នកនៅក្នុងការស្រាវជ្រាវនេះ នឹងត្រូវបានរក្សាទុកជាការសម្ងាត់។  
 លទ្ធផលនៃការស្រាវជ្រាវនេះរួមមាន និក្ខេបបទថ្នាក់បរិញ្ញាបត្រជាន់ខ្ពស់ និង/ឬ ការបោះពុម្ពផ្សាយ។  
 ប៉ុន្តែព័ត៌មានផ្ទាល់ខ្លួនរបស់អ្នកនឹងត្រូវបានយកចេញទាំងស្រុងពីក្នុងរបាយការណ៍ទាំងអស់។

**ភាពអនាមិក**  
 ព័ត៌មានដែលអ្នកបានផ្តល់ នឹងមិនបញ្ចេញឈ្មោះនៅក្នុងរបាយការណ៍នោះទេ។  
 ព័ត៌មានផ្ទាល់ខ្លួនរបស់អ្នកនៅក្នុងកម្រងសំណួរនឹងត្រូវបានដាក់លេខកូដនិងឈ្មោះរបស់  
 អ្នកនៅក្នុងបទសម្ភាសន៍ នឹងត្រូវបានជំនួសដោយឈ្មោះក្លែងក្លាយ។ ដូច្នេះអ្នកដែលអាច  
 កំណត់អត្តសញ្ញាណរបស់អ្នកដូចជាឈ្មោះរបស់អ្នក មានតែអ្នកស្រាវជ្រាវ និងសាស្ត្រា-  
 ចារ្យណែនាំតែប៉ុណ្ណោះ។

**ការផ្ទុកទិន្នន័យ**  
 ព័ត៌មានទាំងអស់ដែលទទួលបានក្នុងការសិក្សាស្រាវជ្រាវ នឹងត្រូវបានរក្សាទុកយ៉ាងមាន  
 សុវត្ថិភាពក្នុងកុំព្យូទ័រការពារដោយលេខសម្ងាត់ ក្នុងអំឡុងពេលធ្វើគម្រោងនេះ។ បន្ទាប់  
 មកនឹងត្រូវបានរក្សាទុកនៅឯសាកលវិទ្យាល័យកង់បេរ៉ាសម្រាប់រយៈពេលប្រាំឆ្នាំបន្ទាប់ពីការបញ្ចប់នៃការ  
 ស្រាវជ្រាវនេះ។ យោងតាមគោលនយោបាយរបស់សាកលវិទ្យាល័យ កង់បេរ៉ា  
 ទិន្នន័យនឹងត្រូវបានបំផ្លាញចោលដើម្បីធានាថាព័ត៌មានទាំងនោះ មិនអាចប្រើប្រាស់បន្តទៀតបានឡើយ។

**ការអនុម័តរបស់គណៈកម្មាធិការសីលធម៌**  
 គម្រោងនេះត្រូវបានអនុម័តដោយគណៈកម្មាធិការស្រាវជ្រាវសីលធម៌មនុស្សរបស់  
 សាកលវិទ្យាល័យកង់បេរ៉ា

**សំណួរ និងការព្រួយបារម្ភ**  
 ប្រសិនបើអ្នកមានសំណួរ និង/ឬការព្រួយបារម្ភណាមួយអំពីការស្រាវជ្រាវនេះ សូម  
 កុំស្ទាក់ស្ទើរក្នុងការទាក់ទងអ្នកស្រាវជ្រាវ និង/ ឬ សាស្ត្រាចារ្យណែនាំដែលមានព័ត៌មាន ទំនាក់ទំនងលម្អិត  
 នៅផ្នែកខាងលើនៃ ទម្រង់បែបបទនេះ។

## APPENDIX C: Consent form (English version)

Project Title
A needs analysis study for the development of English for undergraduate specialisation courses: A case study of a Cambodian university

<b>Consent statement</b>
I have read and understood the information about the research. I understand that my participation in the research is voluntary and I can withdraw from the research at any time without penalty and feeling discomfort. I am not aware of any medical conditions, which would prevent my participation, and I agree to participate in this research.
I also understand that if I have any questions and/or concerns about the research, I can contact Mr Korop Khat (Researcher), Dr Eleni Petraki (Primary Supervisor), and/or Dr Emmaline Lear (Secondary Supervisor) whose contact details are in the participant information form.

Name:	
Signature:	
Date:	

Note: After the completion of the research, if you wish to read the results of the research, there will be a copy of the research report in the form of a thesis available at the English Language Support Unit room 113A, Building A, the Royal University of Phnom Penh, Cambodia.

**APPENDIX D: Consent form (Khmer version)**

**សំណុំបែបបទការយល់ព្រម**

ចំណងជើងគម្រោង
ការសិក្សាតម្រូវការ និងការវិភាគស្ថានភាពសម្រាប់ការអភិវឌ្ឍកម្មវិធីសិក្សាភាសាអង់គ្លេស ESP ក្នុងបរិបទឧត្តមសិក្សាកម្ពុជា

សេចក្តីថ្លែងការណ៍ការយល់ព្រម
<p>ខ្ញុំបានអាន និងយល់អំពីការស្រាវជ្រាវនេះ។ ខ្ញុំដឹងថាការចូលរួមរបស់ខ្ញុំនៅក្នុងការស្រាវជ្រាវនេះគឺជាការស្ម័គ្រចិត្ត ហើយខ្ញុំអាចដកខ្លួនចេញពីការស្រាវជ្រាវនេះនៅពេលណាមួយដោយគ្មានការ ពិន័យ និងការប៉ះពាល់អារម្មណ៍។ ខ្ញុំ ពុំបានដឹងពីលក្ខខណ្ឌសុខភាពណាមួយដែលអាចទប់ស្កាត់ ការចូលរួមរបស់ខ្ញុំ ហើយខ្ញុំបានយល់ព្រមចូលរួមក្នុងការស្រាវជ្រាវនេះ។</p> <p>ខ្ញុំក៏បានដឹងថា ប្រសិនបើខ្ញុំមានសំណួរ និង/ឬការព្រួយបារម្ភណាមួយអំពីការស្រាវជ្រាវនេះ ខ្ញុំអាចទាក់ទងលោក ខាត់ គោរព (អ្នកស្រាវជ្រាវ) បណ្ឌិត អេលេនី ជេតត្រាតី (សាស្ត្រាចារ្យ ណែនាំទី១) និង/ឬ បណ្ឌិត អេម៉ាលីន លារ (សាស្ត្រាចារ្យណែនាំទី២) ដែលមានព័ត៌មានលម្អិត ទំនាក់ទំនងនៅក្នុងសំណុំបែបបទព័ត៌មានអ្នកចូលរួម។</p>

ឈ្មោះ:	
ហត្ថលេខា	
កាលបរិច្ឆេទ	

សំគាល់: បន្ទាប់ពីការបញ្ចប់នៃការស្រាវជ្រាវនេះ ប្រសិនបើអ្នកចង់អានលទ្ធផលនៃការស្រាវជ្រាវនេះសូមអានច្បាប់ចម្លងនៃរបាយការណ៍ស្រាវជ្រាវនេះ ( និក្ខេបបទ ) ដែលនឹងតម្កល់ទុកនៅការិយាល័យ កម្មវិធីគាំទ្រភាសាអង់គ្លេស ១១៣A, អាគារ A នៃសាកលវិទ្យាល័យភូមិន្ទភ្នំពេញ។

## **APPENDIX E: Questionnaire for academic stakeholders (English version)**

### **A needs analysis study for the development of English for undergraduate specialisation courses: A case study of a Cambodian university (*For academic stakeholders*)**

This questionnaire aims to investigate your perceptions of the need for developing new English support/ English for specific purposes (ESP) courses in the Faculty of Science at the Royal University of Phnom Penh (RUPP). ESP courses here refer to English courses, which help undergraduate students for their specialisation and future career. All responses received will remain completely anonymous.

#### **A. Demographic information**

*Please circle your response to the statement below.*

##### **A1. Role:**

1. Lecturer
2. Student

##### **A2. Specialisation:**

1. Biology
2. Chemistry
3. Computer Science
4. Environmental Science
5. Mathematics
6. Physics
7. English

## B. General Perceptions about RUPP undergraduate students' needs in the English language

*Please circle the response to the statements below.*

I think that...	Totally agree	Agree	Disagree	Totally disagree	Don't know
B1. The English subject is necessary for RUPP undergraduate students in the Faculty of Science.	1	2	3	4	5
B2. Developing skills in English for occupational purposes is importance for RUPP undergraduate students in the Faculty of Science.	1	2	3	4	5
B3. Developing skills in English for academic purposes is important RUPP undergraduate students in the Faculty of Science.	1	2	3	4	5
B4. There should be ESP courses for RUPP undergraduate students in the Faculty of Science in addition to the current English for academic courses.	1	2	3	4	5

## C. Needs analysis

### C1. Contents for the ESP courses

*Please circle the option, which you think should be included in the ESP courses. You may circle more than one choice.*

#### C1.1. Speaking

1. Presentation skills
2. Group discussion skills
3. Debating skills
4. Pronunciation skills
5. Other (please specify) \_\_\_\_\_

#### C1.2. Listening

1. Listening strategies (e.g. listening for main ideas, listening for detailed information)
2. Understanding a variety of accents
3. Note-taking skills
4. Understanding main ideas on TV and radio
5. Comprehending messages from conversations, reports, and presentations
6. Listening to instructions (e.g. instructions for assignments)
7. Listening to lectures
8. Other (please specify) \_\_\_\_\_

#### C1.3. Reading



1. Reading strategies (e.g. reading for main ideas, reading for details)
2. Speed reading skills
3. General comprehension skills
4. Reading specialist texts
5. Reading textbooks
6. Reading technical journal articles
7. Reading technical manuals
8. Reading instructions for assignments
9. Reading authentic texts (e.g. newspaper, internet, report)
10. Other (please specify) \_\_\_\_\_

#### C1.4. Writing

1. Writing laboratory reports
2. Writing field-trip reports
3. Writing assignments
4. Writing emails
5. Writing different text types
6. Writing summaries
7. Note-taking skills
8. Other (please specify) \_\_\_\_\_

#### C1.5. Vocabulary

1. Vocabulary strategies (e.g. guessing the vocabulary meaning from context)
2. Using vocabulary in context
3. Learning specialist vocabulary
4. Word formation and family skills (e.g. noun, verb, adjective, adverb)
5. Pronouncing specialist vocabulary
6. Other (please specify) \_\_\_\_\_

#### C1.6. Grammar

1. Present simple (e.g. She gets up at 6 o'clock.)
2. Past simple (e.g. They went shopping yesterday.)
3. Present perfect (e.g. We have been to Siem Reap two times.)
4. Reported speech (e.g. It is suggested that...)
5. Passive voice (e.g. This was announced yesterday.)
6. Logical connectors (e.g. while, when, because, therefore)
7. Relative clauses (e.g. He is the man who can run very fast: who, which...)
8. Other (please specify) \_\_\_\_\_

#### C1.7. Cross-cultural awareness

1. Politeness in different cultures
2. Asking questions in different cultures
3. Cultural knowledge
4. Cultural Stereotypes
5. Taboo language
6. Agreement and disagreement in different cultures
7. Avoiding miscommunication
8. Other (please specify) \_\_\_\_\_

## C1.8. Business communication

1. Differences between formal and informal language
2. Communication in business meetings
3. Language for presentations
4. Language for self-introductions
5. Language for telephone interactions
6. Conversation skills (e.g. small talk, turn-taking, interruptions)
7. Business report writing
8. Business letter writing
9. Business email writing
10. Other (please specify) \_\_\_\_\_

## C2. Necessity of the content for the ESP courses

*Please circle your response regarding the necessity of the content to be included in the ESP courses.*

C2.1. For academic purposes					Content	C2.2. For future career				
Very high	High	Moderate	Low	Don't know		Very high	High	Moderate	Low	Don't know
1	2	3	4	5	1. Speaking	1	2	3	4	5
1	2	3	4	5	2. Listening	1	2	3	4	5
1	2	3	4	5	3. Reading	1	2	3	4	5
1	2	3	4	5	4. Writing	1	2	3	4	5
1	2	3	4	5	5. Vocabulary	1	2	3	4	5
1	2	3	4	5	6. Grammar	1	2	3	4	5
1	2	3	4	5	7. Cross-cultural awareness	1	2	3	4	5
1	2	3	4	5	8. Business communication	1	2	3	4	5
1	2	3	4	5	9. Other (please specify) _____	1	2	3	4	5

## D. Situation analysis

*Please circle your response to the statements below.*

D1. RUPP undergraduate students should be provided with...

1. the same kind of ESP courses for all departments in the Faculty of Science.
2. different ESP courses for each individual departments in the Faculty of Science.
3. other (please specify) \_\_\_\_\_

D2. An ESP course should focus on...

1. English for students' technical specialisation (e.g. English for Chemistry)
2. English for workplace
3. 1 and 2
4. other (please specify) \_\_\_\_\_

D3. An ESP course should be offered for duration of...

1. one semester.
2. two semesters.
3. three semesters.
4. other (please specify) \_\_\_\_\_

*Please provide reason(s) for your response in D3:* \_\_\_\_\_  
\_\_\_\_\_

D4. The ESP course should be a course of...

1. one level.
2. two different levels.
3. three different levels.
4. other (please specify) \_\_\_\_\_

D5. The requirement of English proficiency for an ESP course enrolment should be...

1. elementary level.
2. pre-intermediate level.
3. intermediate level.
4. none.
5. other (please specify) \_\_\_\_\_

D6. An ESP course should follow or incorporate... (You may circle more than one choice for this question)

1. a functional syllabus (a course focusing on communicative functions such as requesting, complaining, suggesting, agreeing)
2. a task-based syllabus (a course organising around tasks students will need to complete in the target language and in the workplace)
3. a skills-based syllabus (a course focusing on strategies (sub-skills) in writing, reading, listening, speaking (macro-skills))
4. a competency-based syllabus (a course focusing on students' performances in specific skills and/or situations to reach certain standards/ benchmarks)
5. integrated syllabus ( a course reflecting priorities in teaching rather than absolute choices)
6. other (please specify) \_\_\_\_\_

D7. The assessments of an ESP course should include... (You may circle more than one choice for this question.)

1. Presentation(s).
2. Written assignment(s) (e.g. paragraphs, essay).
3. Quizzes.
4. Midterm test.
5. Final exam.
6. Portfolios.
7. Class participation.
8. Attendance.
9. Research report(s) of workplace visit(s)
10. other (please specify) \_\_\_\_\_

D8. ESP courses should be...

1. compulsory.
2. elective.
3. other (please specify) \_\_\_\_\_

*Please provide reason(s) for your response in D9:* \_\_\_\_\_

\_\_\_\_\_

D9. Even if the ESP course is not compulsory, the number of enrolments might be...

1. high.
2. low.
3. very low.
4. other (please specify) \_\_\_\_\_

D10. The challenges of developing ESP courses may include... (You may circle more than one choice for this question.)

1. English lecturers with little specialist knowledge of the field.
2. students with low English proficiency.
3. students with mixed English proficiency.
4. lack of teaching materials.
5. limited teaching facilities.
6. other (please specify) \_\_\_\_\_

D11. Possible measures to deal with the ESP course development challenges include...

1. developing training for English lecturers to teach ESP courses.
2. collaborative learning and teaching between students and English lecturers.
3. collaborative work between English lecturers and subject specific lecturers.
4. utilising commercial textbooks.
5. inviting guest speakers to provide lectures.
6. other (please specify) \_\_\_\_\_

*Please provide reason(s) for your response in D12:* \_\_\_\_\_

\_\_\_\_\_

D12. Materials to be used in the ESP courses should be... (You may circle more than one choice for this question.)

1. commercial ESP textbooks.
2. authentic materials (e.g. newspapers, manuals).
3. teacher-made materials (e.g. handouts).
4. guest lecture notes (e.g. power-point presentation)
5. other (please specify) \_\_\_\_\_

## E. Additional information

E1. If the researcher would like more information from you, would you be prepared to be interviewed? The interview will take approximately 30 minutes, and information is confidential.

1. Yes
2. No

E2. If so, please give your:

Name: \_\_\_\_\_

Contact telephone number: \_\_\_\_\_

*Thank you very much for your help.*

**APPENDIX F: Questionnaire for academic stakeholders (Khmer version)**

ការសិក្សាវិភាគទៅលើតម្រូវការសម្រាប់ការអភិវឌ្ឍន៍វគ្គសិក្សាភាសាអង់គ្លេសសម្រាប់និស្សិត  
ថ្នាក់បរិញ្ញាបត្រ (ESP): ករណីសិក្សារបស់សាកលវិទ្យាល័យមួយនៅកម្ពុជា  
(សម្រាប់និស្សិតសាស្ត្រាចារ្យ)

កម្រងសំណួរនេះមានគោលបំណងធ្វើការពិគ្រោះការយល់ឃើញរបស់អ្នក អំពីតម្រូវការការអភិវឌ្ឍន៍  
វគ្គសិក្សា ភាសាអង់គ្លេសសម្រាប់និស្សិតបរិញ្ញាបត្រ (ESP) នៅក្នុងមហាវិទ្យាល័យវិទ្យាសាស្ត្រនៃ  
សាកលវិទ្យាល័យភូមិន្ទភ្នំពេញ (RUPP)។ វគ្គសិក្សា ESP គឺជាវគ្គសិក្សាភាសាអង់គ្លេសសំរាប់ជួយនិស្សិត  
ថ្នាក់បរិញ្ញាបត្រលើជំនាញ ឯកទេស និងអាជីពរបស់ពួកគេនាពេលអនាគត។ ការឆ្លើយតបទាំងអស់របស់អ្នក  
នឹងត្រូវបានរក្សាទុកជាអនាមិក ទាំងស្រុង។

A. ព័ត៌មានផ្ទាល់ខ្លួន

សូមគូសរង្វង់លើលេខនៃការឆ្លើយតបខាងក្រោម (ជម្រើសអាចច្រើនជាងមួយ)៖

A1. តួនាទី៖

1. និស្សិត
2. សាស្ត្រាចារ្យ

A2. ជំនាញ៖

1. ជីវវិទ្យា
2. គីមីវិទ្យា
3. ព័ត៌មានវិទ្យា
4. បរិស្ថាន
5. គណិតវិទ្យា
6. រូបវិទ្យា
7. អង់គ្លេស

B.ការយល់ឃើញទូទៅអំពីតម្រូវការភាសាអង់គ្លេសសម្រាប់និស្សិតថ្នាក់បរិញ្ញាបត្រនៅ RUPP

សូមគូសរង្វង់លើលេខនៃការឆ្លើយតបខាងក្រោម៖

ខ្ញុំគិតថា...	យល់ស្របទាំងស្រុង	យល់ស្រប	មិនយល់ស្រប	មិនយល់ស្របទាល់តែសស់	មិនដឹង
B1.មុខវិជ្ជាភាសាអង់គ្លេសពិតជាចាំបាច់សម្រាប់និស្សិតថ្នាក់ បរិញ្ញាបត្រនៃមហាវិទ្យាល័យវិទ្យាសាស្ត្រនៅ RUPP ។	1	2	3	4	5
B2.ភាសាអង់គ្លេសពិតជាចាំបាច់សម្រាប់ការងាររបស់និស្សិតថ្នាក់បរិញ្ញាបត្រនៃមហាវិទ្យាល័យវិទ្យាសាស្ត្រនៅRUPPនាពេលអនាគត ។	1	2	3	4	5
B3.ភាសាអង់គ្លេសពិតជាចាំបាច់សម្រាប់ឯកទេសរបស់និស្សិតថ្នាក់បរិញ្ញាបត្រនៃមហាវិទ្យាល័យវិទ្យាសាស្ត្រនៅ RUPP ។	1	2	3	4	5
B4. គួរតែមានវគ្គសិក្សាESPសំរាប់និស្សិតថ្នាក់បរិញ្ញាបត្រ នៃមហាវិទ្យាល័យវិទ្យាសាស្ត្របន្ថែមពីលើកម្មវិធីភាសា អង់គ្លេសនាពេលបច្ចុប្បន្ននៅ RUPP ។	1	2	3	4	5

C. ការវិភាគអំពីតម្រូវការ

C1. មាតិកាសម្រាប់វគ្គសិក្សា ESP

សូមគូសរង្វង់លើលេខនៃមាតិកា រឺសរសេរក្នុងចន្លោះខាងក្រោម ដែលអ្នកគិតថាគួរតែបញ្ចូលនៅក្នុងវគ្គសិក្សាESP ។ (ជម្រើសអាចច្រើនជាងមួយ)

C1.1. មាតិកាសម្រាប់ការនិយាយ គួរតែបញ្ចូលនូវ...

1. ជំនាញធ្វើបទបង្ហាញ
2. ជំនាញធ្វើការពិភាក្សាជាក្រុម
3. ជំនាញធ្វើការពិភាក្សាដេញដោល (debate)
4. ជំនាញធ្វើការបញ្ចេញសំឡេង
5. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

C1.2. មាតិកាសម្រាប់ការស្តាប់ គួរតែបញ្ចូលនូវ...

1. យុទ្ធសាស្ត្រក្នុងការស្តាប់ (ឧ. ជំនាញស្តាប់រកព័ត៌មានគោល, ជំនាញស្តាប់រកព័ត៌មានលម្អិត ។ល។)
2. យល់ដឹងពីការបញ្ចេញសំឡេង (accents)
3. ជំនាញក្នុងការកត់ត្រា
4. ការយល់ពីចំណុចសំខាន់ៗ ក្នុងការស្តាប់វិទ្យុ និងទូរទស្សន៍
5. ការយល់អត្ថន័យពីការសន្ទនា របាយការណ៍ និងបទបង្ហាញផ្សេងៗ
6. ការស្តាប់សេចក្តីណែនាំ (ឧ. សេចក្តីណែនាំសម្រាប់កិច្ចការស្រាវជ្រាវ)
7. ការស្តាប់ពីការបង្រៀន
8. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

C1.3. មាតិកាសម្រាប់ការអាន គួរតែបញ្ចូលនូវ...

1. យុទ្ធសាស្ត្រក្នុងការអាន (ឧ. ជំនាញអានរកព័ត៌មានគោល ជំនាញអានរកព័ត៌មានលម្អិត ។ល។)
2. ជំនាញក្នុងការបង្កើនល្បឿនអាន
3. ជំនាញទូទៅក្នុងការអាន
4. ការអានអត្ថបទឯកទេស (specialist texts)
5. ការអានសៀវភៅមេរៀន (textbooks)
6. ការអានអត្ថបទបច្ចេកទេស (journal articles)
7. ការអានសៀវភៅណែនាំ (manuals)
8. ការអានសេចក្តីណែនាំសម្រាប់កិច្ចការស្រាវជ្រាវ (assignments)
9. ការអានអត្ថបទទូទៅ (ឧ. កាសែត, អ៊ិនធើណែត, របាយការណ៍ ។ល។)
10. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

C1.4. មាតិកាសម្រាប់ការសរសេរ គួរតែបញ្ចូលនូវ...

1. ការសរសេររបាយការណ៍មន្ទីរពិសោធន៍ (Laboratory reports)
2. ការសរសេររបាយការណ៍អំពីដំណើរទស្សនកិច្ចសិក្សា (field-trip reports)
3. ការសរសេរកិច្ចការស្រាវជ្រាវ (assignments)



4. ការសរសេរអីមែល
5. ការសរសេរអត្ថបទផ្សេងៗគ្នា
6. ការសរសេរសេចក្តីសង្ខេប
7. ជំនាញកត់ចំណាំ
8. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

C1.5. មាតិកាសម្រាប់វាក្យសព្ទ (vocabulary) គួរតែបញ្ចូលនូវ...

1. យុទ្ធសាស្ត្រក្នុងវាក្យសព្ទ (ឧ. ការទាយអត្ថន័យពាក្យក្នុងអត្ថបទ)
2. ការប្រើប្រាស់វាក្យសព្ទនៅក្នុងបរិបទ
3. វាក្យសព្ទឯកទេស
4. ជំនាញក្នុងការបង្កើតពាក្យ និងសន្តានពាក្យ (ឧ. នាម, កិរិយាស័ព្ទ, គុណនាម, កិរិយាវិសេស)
5. ការបញ្ចេញសំឡេងលើវាក្យសព្ទឯកទេស
6. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

C1.6. មាតិកាសម្រាប់វេយ្យាករណ៍ គួរតែបញ្ចូលនូវ...

1. បច្ចុប្បន្នកាលធម្មតា (ឧ. នាងក្រោកពីកេងនៅម៉ោង6 ។)
2. អតីតកាលធម្មតា (ឧ. ពួកគេបានទៅទិញឥវ៉ាន់កាលពីម្សិលមិញ ។)
3. បច្ចុប្បន្នកាលសំបូរណៈ (present perfect) (ឧ. យើងបានទៅសៀមរាបពីរដង។)
4. ការរាយការណ៍ (reported speech) (ឧ. គាត់ត្រូវបានរាយការណ៍ថា...)
5. ទំរង់អកម្ម (passive voice) (ឧ. លទ្ធផលបោះឆ្នោតត្រូវបានប្រកាសកាលពីម្សិលមិញ ។)
6. ឈ្មោះរបស់ល្អៗ (ឧ. ខណៈពេលដែល, នៅពេល, ពីព្រោះ, ដូច្នោះ ។ល។)
7. អនុប្រយោគ (relative clauses: who, which) (ឧ. គាត់ជាបុរសដែលអាចរត់បានយ៉ាងលឿន ។)
8. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

C1.7. មាតិកាសម្រាប់ការយល់ដឹងពីវប្បធម៌បរទេស គួរតែបញ្ចូលនូវ...

1. ភាពគួរសមនៅក្នុងវប្បធម៌ខុសគ្នា
2. ការសួរសំណួរនៅក្នុងវប្បធម៌ខុសគ្នា
3. ចំណេះដឹងពីវប្បធម៌បរទេស
4. ការវាយតម្លៃវប្បធម៌
5. ភាសាបម្រាម (taboo language)
6. ការព្រមព្រៀង និងការខ្វែងគំនិតនៅក្នុងវប្បធម៌ខុសគ្នា
7. ជៀសវាងការយល់ច្រឡំក្នុងការទំនាក់ទំនង (avoiding miscommunication)
8. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

C1.8. មាតិកាសម្រាប់ទំនាក់ទំនងពាណិជ្ជកម្ម គួរតែបញ្ចូលនូវ...

1. ភាពខុសគ្នារវាងភាសាផ្លូវការ និងក្រៅផ្លូវការ
2. ទំនាក់ទំនងក្នុងការប្រជុំអាជីវកម្ម
3. ភាសាសម្រាប់ធ្វើបទបង្ហាញ
4. ភាសាសម្រាប់ធ្វើការណែនាំខ្លួន
5. ភាសាសម្រាប់ទំនាក់ទំនងទូរស័ព្ទ

6. ជំនាញសន្ទនា (ឧ. ការនិយាយលេងខ្លីៗ)
7. ការសរសេររបាយការណ៍ក្នុងវិស័យពាណិជ្ជកម្ម (business report writing)
8. ការសរសេរលិខិតក្នុងវិស័យពាណិជ្ជកម្ម (business letter writing)
9. ការសរសេរអ៊ីម៉ែលក្នុងវិស័យពាណិជ្ជកម្ម
10. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

**C2. ភាពចាំបាច់នៃមតិកាសម្រាប់វគ្គសិក្សា ESP**

*សូមគូសរង្វង់លើការឆ្លើយតបអំពីការយល់ឃើញរបស់អ្នកពីភាពចាំបាច់នៃមតិកានិមួយៗ ដែលត្រូវបញ្ចូលទៅក្នុង វគ្គសិក្សា ESP*

C2.1. សម្រាប់ការសិក្សា						C2.2. សម្រាប់ការងារនាពេលអនាគត				
ខ្លាំងណាស់	ខ្លាំង	ល្មម	ទាប	មិនដឹង		ខ្លាំងណាស់	ខ្លាំង	ល្មម	ទាប	មិនដឹង
1	2	3	4	5	1. ការនិយាយ	1	2	3	4	5
1	2	3	4	5	2. ការស្តាប់	1	2	3	4	5
1	2	3	4	5	3. ការអាន	1	2	3	4	5
1	2	3	4	5	4. ការសរសេរ	1	2	3	4	5
1	2	3	4	5	5. វាក្យសព្ទ	1	2	3	4	5
1	2	3	4	5	6. វេយ្យាករណ៍	1	2	3	4	5
1	2	3	4	5	7. ការយល់ដឹងពីវប្បធម៌បរទេស	1	2	3	4	5
1	2	3	4	5	8. ទំនាក់ទំនងពាណិជ្ជកម្ម	1	2	3	4	5
1	2	3	4	5	9. ផ្សេងៗ (សូមបញ្ជាក់)	1	2	3	4	5

**D. ការវិភាគអំពីស្ថានភាព**

*សូមគូសរង្វង់លើការឆ្លើយតប រឺសរសេរក្នុងចន្លោះខាងក្រោម៖*

**D1. និស្សិតថ្នាក់បរិញ្ញាបត្រ RUPP គួរតែរៀនវគ្គសិក្សា ESP...**

1. ប្រភេទដូចគ្នាតែមួយសម្រាប់គ្រប់ដេប៉ាតឺម៉ង់ទាំងអស់នៅក្នុងមហាវិទ្យាល័យវិទ្យាសាស្ត្រ ។
2. ប្រភេទខុសគ្នាសម្រាប់ដេប៉ាតឺម៉ង់នីមួយៗនៅក្នុងមហាវិទ្យាល័យវិទ្យាសាស្ត្រ ។
3. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

**D2. វគ្គសិក្សា ESP គួរផ្តោតលើ...**

1. ភាសាអង់គ្លេសសម្រាប់ជំនាញ ឯកទេសរបស់និស្សិត ។ (ឧ. ភាសាអង់គ្លេសសម្រាប់ឯកទេសគីមីវិទ្យា)
2. ភាសាអង់គ្លេសសម្រាប់ការងារ ។

- 3. 1 និង 2
- 4. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

D3. វគ្គសិក្សា ESP គួរតែមានរយៈពេល...

- 1. 1 ឆមាស ។
- 2. 2 ឆមាស ។
- 3. 3 ឆមាស ។
- 4. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

សូមផ្តល់ហេតុផលសម្រាប់ចម្លើយ D3: \_\_\_\_\_

D4. វគ្គសិក្សា ESP គួរតែមាន...

- 1. 1 កម្រិត ។
- 2. 2 កម្រិតផ្សេងគ្នា ។
- 3. 3 កម្រិតផ្សេងគ្នា ។
- 4. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

D5. លក្ខខណ្ឌនៃកម្រិតភាសាអង់គ្លេសសំរាប់ចូលរៀនវគ្គសិក្សា ESP គឺ ...

- 1. កម្រិតដំបូង (elementary) ។
- 2. កម្រិតបុរេមធ្យម (pre-intermediate) ។
- 3. កម្រិតមធ្យម (intermediate) ។
- 4. កម្រិតអ្វីក៏បាន (none) ។
- 5. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

D6. វគ្គសិក្សា ESP គួរអនុវត្តតាម... (អ្នកអាចគូសជម្រើសបានច្រើនជាងមួយសម្រាប់សំណួរនេះ)

- 1. គម្រោងសិក្សាមុខងារ (functional syllabus គឺជាគម្រោងសិក្សាដែលផ្តោតទៅលើការស្នើសុំ ការតវ៉ា ការយល់ព្រម ។ល។)
- 2. គម្រោងសិក្សាមូលដ្ឋានភារកិច្ច (task-based syllabus គឺជាគម្រោងសិក្សាដែលផ្តោតសំខាន់លើការបំពេញភារកិច្ច មួយដែលជាភាសាអង់គ្លេសនៅក្នុងកន្លែងការងារ)
- 3. គម្រោងសិក្សាមូលដ្ឋានជំនាញ (skills-based syllabus គឺជាគម្រោងសិក្សាដែលផ្តោតសំខាន់លើយុទ្ធសាស្ត្រ នៅក្នុងការសរសេរ ការអាន ការស្តាប់ និងការនិយាយ
- 4. គម្រោងសិក្សាមូលដ្ឋានសមត្ថភាព (competency-based syllabus គឺវគ្គសិក្សាដែលផ្តោតសំខាន់លើការអនុវត្ត របស់និស្សិតនៅក្នុងស្ថានភាពមួយក្នុងកម្រិតស្តង់ដារមួយ)
- 5. គម្រោងសិក្សាមូលដ្ឋានរួមបញ្ចូលគ្នា (integrated syllabus គឺជាគម្រោងសិក្សាដែលផ្តោតសំខាន់លើអាទិភាពចាំបាច់ណាមួយក្នុងការសិក្សាជាជាងជម្រើសដាច់ខាតមួយ)
- 6. ផ្សេងទៀត (សូមបញ្ជាក់) \_\_\_\_\_

D7. ការវាយតម្លៃការសិក្សាទៅលើនិស្សិតក្នុងវគ្គសិក្សា ESP នេះគួរតែរួមបញ្ចូលនូវ...

(អ្នកអាចគូសជម្រើសច្រើនជាងមួយ សម្រាប់សំណួរនេះ)

- 1. ការធ្វើបទបង្ហាញ (presentation) ។
- 2. កិច្ចការស្រាវជ្រាវ (assignment) ។

3. សំណួរ (quizzes) ។
4. សំណួរពាក់កណ្តាលឆមាស (midterm test) ។
5. ប្រឡងឆមាស (final exam) ។
6. កម្រងឯកសារតាមដាន (portfolios) ។
7. ការចូលរួមក្នុងថ្នាក់ (class participation)
8. វត្តមាន (attendance) ។
9. របាយការណ៍ស្រាវជ្រាវទស្សនកិច្ច (research reports of workplace visit) ។
10. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

D8. ការចុះឈ្មោះចូលរៀនវគ្គសិក្សា ESP គួរតែ ...

1. ជាកំហិត (compulsory) ។
2. ជាជម្រើសមួយ (elective) ។
3. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

សូមផ្តល់ហេតុផលសម្រាប់ចម្លើយ D9: \_\_\_\_\_

D9. ទោះបីការចុះឈ្មោះចូលរៀនវគ្គសិក្សាESP មិនមែនជាការតម្រូវក៏ដោយ ចំនួននិស្សិតដែលចុះឈ្មោះចូលរៀន វគ្គសិក្សានេះប្រហែលជានឹងមាន ...

1. ចំនួនច្រើន ។
2. ចំនួនតិច ។
3. ចំនួនតិចតួចបំផុត ។
4. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

D10. បញ្ហាប្រឈមនៃការអភិវឌ្ឍន៍វគ្គសិក្សា ESP រួមមាន ...

(អ្នកអាចគូសជម្រើសច្រើនជាងមួយសម្រាប់សំណួរនេះ។)

1. សាស្ត្រាចារ្យភាសាអង់គ្លេសដែលមានចំណេះដឹងខាងជំនាញឯកទេសរបស់និស្សិតតិចតួច ។
2. និស្សិតដែលមានកំរិតភាសាអង់គ្លេសទាប ។
3. និស្សិតមានកំរិតភាសាអង់គ្លេសចម្រុះ ។
4. ខ្វះខាតសម្ភារៈបង្រៀន ។ (ឧ. សៀវភៅESP ឯកសារពាក់ព័ន្ធនៃESP)
5. សម្ភារៈបរិក្ខារបង្រៀននៅមានកម្រិត ។ (ឧ. LCD projector, កុំព្យូទ័រ)
6. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

D11. វិធានការដែលអាចធ្វើបាន ដើម្បីដោះស្រាយបញ្ហាប្រឈម ក្នុងការអភិវឌ្ឍន៍វគ្គសិក្សា ESP រួមមាន...

1. ការបណ្តុះបណ្តាលសាស្ត្រាចារ្យភាសាអង់គ្លេសសម្រាប់បង្រៀនវគ្គសិក្សា ESP ។
2. ការបញ្ចូលវិធីសាស្ត្ររៀន និងការបង្រៀនសហការគ្នារវាងនិស្សិត និងសាស្ត្រាចារ្យភាសាអង់គ្លេស ។
3. ការសហការគ្នារវាងសាស្ត្រាចារ្យភាសាអង់គ្លេស និងសាស្ត្រាចារ្យជំនាញឯកទេស ។
4. ការប្រើប្រាស់សៀវភៅសិក្សាដែលមានស្រាប់លើទីផ្សារ ។
5. អញ្ជើញវគ្គនិស្សិតមកផ្តល់បទបង្ហាញ ។
6. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

សូមផ្តល់ហេតុផលសម្រាប់ចម្លើយ D12: \_\_\_\_\_

D12. សម្ភារៈបង្រៀននៅក្នុងវគ្គសិក្សា ESP គួរតែមាន...  
(អ្នកអាចគូសជម្រើសច្រើនជាងមួយសម្រាប់សំណួរនេះ។)

1. សៀវភៅ ESP មានស្រាប់លើទីផ្សារ ។
2. ឯកសារទូទៅ (ឧ. កាសែត សៀវភៅណែនាំបច្ចេកទេស) ។
3. ឯកសារចងក្រងដោយសាស្ត្រាចារ្យ (ឧ. hand-outs) ។
4. ឯកសារចងក្រងដោយវគ្គនិស្សិត (ឧ.ឯកសារធ្វើបទបង្ហាញ) ។
5. ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

E. ព័ត៌មានបន្ថែម

E1. ប្រសិនបើអ្នកស្រាវជ្រាវចង់បានព័ត៌មានបន្ថែមពីអ្នក តើអ្នកអាចចូលរួមការសម្ភាសន៍បានដែររឺទេ?  
ការសម្ភាសន៍មានរយៈពេលប្រហែល 30នាទី។ ព័ត៌មានដែលអ្នកបានផ្តល់គឺត្រូវបានរក្សាជាការសម្ងាត់ ។

1. យល់ព្រម
2. មិនយល់ព្រម

E2. ប្រសិនបើអ្នកយល់ព្រម សូមបំពេញព័ត៌មានខាងក្រោម៖

ឈ្មោះ: \_\_\_\_\_

លេខទូរស័ព្ទ ទំនាក់ទំនង \_\_\_\_\_

**សូមអរគុណ!**

## **APPENDIX G: Questionnaire for industry stakeholders (English version)**

### **A needs analysis study for the development of English for undergraduate specialisation courses: A case study of a Cambodian university**

*(For industry stakeholders)*

This questionnaire aims to investigate your perceptions of the need for developing new English support/ English for specific purposes (ESP) courses in the Faculty of Science at the Royal University of Phnom Penh (RUPP). ESP courses here refer to English courses, which help undergraduate students for their specialisation and future career. All responses received will remain completely anonymous.

#### **A. Demographic information**

*Please circle your response to the statement below.*

##### **A1. Role:**

1.  Management position
2.  Non management position

##### **A2. Specialisation:**

1.  Biology
2.  Chemistry
3.  Computer Science
4.  Environmental Science
5.  Mathematics
6.  Physics

## B. General Perceptions about RUPP undergraduate students' needs in the English language

*Please circle the response to the statements below.*

I think that...	Totally agree (1)	Agree (2)	Disagree (3)	Totally disagree (4)	Don't know (5)
B1. The English subject is necessary for RUPP undergraduate students in the Faculty of Science.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B2. Developing skills in English for occupational purposes is importance for RUPP undergraduate students in the Faculty of Science.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B3. Developing skills in English for academic purposes is important RUPP undergraduate students in the Faculty of Science.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B4. There should be ESP courses for RUPP undergraduate students in the Faculty of Science in addition to the current English for academic courses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## C. Needs analysis

### C1. Contents for the ESP courses

*Please circle the option, which you think should be included in the ESP courses. You may circle more than one choice.*

#### C1.1. Speaking

1.  Presentation skills
2.  Group discussion skills
3.  Debating skills
4.  Pronunciation skills
5.  Other (please specify) \_\_\_\_\_

#### C1.2. Listening

1.  Listening strategies (e.g. listening for main ideas, listening for detailed information)
2.  Understanding a variety of accents
3.  Note-taking skills
4.  Understanding main ideas on TV and radio
5.  Comprehending messages from conversations, reports, and presentations
6.  Listening to instructions (e.g. instructions for assignments)
7.  Listening to lectures
8.  Other (please specify) \_\_\_\_\_

### C1.3. Reading

1.  Reading strategies (e.g. reading for main ideas, reading for details)
2.  Speed reading skills
3.  General comprehension skills
4.  Reading specialist texts
5.  Reading textbooks
6.  Reading technical journal articles
7.  Reading technical manuals
8.  Reading instructions for assignments
9.  Reading authentic texts (e.g. newspaper, internet, report)
10.  Other (please specify) \_\_\_\_\_

### C1.4. Writing

1.  Writing laboratory reports
2.  Writing field-trip reports
3.  Writing assignments
4.  Writing emails
5.  Writing different text types
6.  Writing summaries
7.  Note-taking skills
8.  Other (please specify) \_\_\_\_\_

### C1.5. Vocabulary

1.  Vocabulary strategies (e.g. guessing the vocabulary meaning from context)
2.  Using vocabulary in context
3.  Learning specialist vocabulary
4.  Word formation and family skills (e.g. noun, verb, adjective, adverb)
5.  Pronouncing specialist vocabulary
6.  Other (please specify) \_\_\_\_\_

### C1.6. Grammar

1.  Present simple (e.g. She gets up at 6 o'clock.)
2.  Past simple (e.g. They went shopping yesterday.)
3.  Present perfect (e.g. We have been to Siem Reap two times.)
4.  Reported speech (e.g. It is suggested that...)
5.  Passive voice (e.g. This was announced yesterday.)
6.  Logical connectors (e.g. while, when, because, therefore)
7.  Relative clauses (e.g. He is the man who can run very fast: who, which...)
8.  Other (please specify) \_\_\_\_\_

### C1.7. Cross-cultural awareness

1.  Politeness in different cultures
2.  Asking questions in different cultures
3.  Cultural knowledge
4.  Cultural Stereotypes
5.  Taboo language
6.  Agreement and disagreement in different cultures



7.  Avoiding miscommunication
8.  Other (please specify) \_\_\_\_\_

### C1.8. Business communication

1.  Differences between formal and informal language
2.  Communication in business meetings
3.  Language for presentations
4.  Language for self-introductions
5.  Language for telephone interactions
6.  Conversation skills (e.g. small talk, turn-taking, interruptions)
7.  Business report writing
8.  Business letter writing
9.  Business email writing
10.  Other (please specify) \_\_\_\_\_

## C2. Necessity of the content for the ESP courses

*Please circle your response regarding the necessity of the content to be included in the ESP courses.*

C2.1. For academic purposes					Content	C2.2. For future career				
Very high (1)	High (2)	Moderate (3)	Low (4)	Don't know (5)		Very high (1)	High (2)	Moderate (3)	Low (4)	Don't know (5)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. Speaking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Listening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Reading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Writing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Vocabulary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. Grammar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7. Cross-cultural awareness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8. Business communication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9. Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## D. Situation analysis

*Please circle your response to the statements below.*

D1. RUPP undergraduate students should be provided with...

1.  the same kind of ESP courses for all departments in the Faculty of Science.
2.  different ESP courses for each individual departments in the Faculty of Science.
3.  other (please specify) \_\_\_\_\_

D2. An ESP course should focus on...

1.  English for students' technical specialisation (e.g. English for Chemistry)

2.  English for workplace
3.  1 and 2
4.  other (please specify) \_\_\_\_\_

D3. An ESP course should be offered for duration of...

1.  one semester.
2.  two semesters.
3.  three semesters.
4.  other (please specify) \_\_\_\_\_

*Please provide reason(s) for your response in D3:* \_\_\_\_\_

D4. The ESP course should be a course of...

1.  one level.
2.  two different levels.
3.  three different levels.
4.  other (please specify) \_\_\_\_\_

D5. The requirement of English proficiency for an ESP course enrolment should be...

1.  elementary level.
2.  pre-intermediate level.
3.  intermediate level.
4.  none.
5.  other (please specify) \_\_\_\_\_

D6. An ESP course should follow or incorporate... (You may circle more than one choice for this question)

1.  a functional syllabus (a course focusing on communicative functions such as requesting, complaining, suggesting, agreeing)
2.  a task-based syllabus (a course organising around tasks students will need to complete in the target language and in the workplace)
3.  a skills-based syllabus (a course focusing on strategies (sub-skills) in writing, reading, listening, speaking (macro-skills))
4.  a competency-based syllabus (a course focusing on students' performances in specific skills and/or situations to reach certain standards/ benchmarks)
5.  integrated syllabus ( a course reflecting priorities in teaching rather than absolute choices)
6.  other (please specify) \_\_\_\_\_

D7. The assessments of an ESP course should include... (You may circle more than one choice for this question.)

1.  Presentation(s).
2.  Written assignment(s) (e.g. paragraphs, essay).
3.  Quizzes.
4.  Midterm test.
5.  Final exam.
6.  Portfolios.
7.  Class participation.
8.  Attendance.
9.  Research report(s) of workplace visit(s)

10.  other (please specify) \_\_\_\_\_  
D8. ESP courses should be...

1.  compulsory.
2.  elective.
3.  other (please specify) \_\_\_\_\_

*Please provide reason(s) for your response in D9:* \_\_\_\_\_

D9. Even if the ESP course is not compulsory, the number of enrolments might be...

1.  high.
2.  low.
3.  very low.
4.  other (please specify) \_\_\_\_\_

D10. The challenges of developing ESP courses may include... (You may circle more than one choice for this question.)

1.  English lecturers with little specialist knowledge of the field.
2.  students with low English proficiency.
3.  students with mixed English proficiency.
4.  lack of teaching materials.
5.  limited teaching facilities.
6.  other (please specify) \_\_\_\_\_

D11. Possible measures to deal with the ESP course development challenges include...

1.  developing training for English lecturers to teach ESP courses.
2.  collaborative learning and teaching between students and English lecturers.
3.  collaborative work between English lecturers and subject specific lecturers.
4.  utilising commercial textbooks.
5.  inviting guest speakers to provide lectures.
6.  other (please specify) \_\_\_\_\_

*Please provide reason(s) for your response in D12:* \_\_\_\_\_

D12. Materials to be used in the ESP courses should be... (You may circle more than one choice for this question.)

1.  commercial ESP textbooks.
2.  authentic materials (e.g. newspapers, manuals).
3.  teacher-made materials (e.g. handouts).
4.  guest lecture notes (e.g. power-point presentation)
5.  other (please specify) \_\_\_\_\_

E. Additional information

E1. If the researcher would like more information from you, would you be prepared to be interviewed? The interview will take approximately 30 minutes, and information is confidential.

1.  Yes
2.  No

E2. If so, please give your:

Name: \_\_\_\_\_

Contact telephone number: \_\_\_\_\_

***Thank you very much for your help.***

**APPENDIX H: Questionnaire for industry stakeholders (Khmer version)**

ការសិក្សាវិភាគទៅលើតម្រូវការសម្រាប់ការអភិវឌ្ឍន៍វគ្គសិក្សាភាសាអង់គ្លេសសម្រាប់និស្សិត ថ្នាក់បរិញ្ញាបត្រ (ESP): ករណីសិក្សារបស់សាកលវិទ្យាល័យមួយនៅកម្ពុជា

(សម្រាប់និយោជកនិយោជិត)

កម្រងសំណួរនេះមានគោលបំណងធ្វើការពិគ្រោះការយល់ឃើញរបស់អ្នក អំពីតម្រូវការការអភិវឌ្ឍន៍វគ្គសិក្សា ភាសាអង់គ្លេសសម្រាប់និស្សិតបរិញ្ញាបត្រ (ESP) នៅក្នុងមហាវិទ្យាល័យវិទ្យាសាស្ត្រនៃសាកលវិទ្យាល័យភូមិន្ទភ្នំពេញ (RUPP)។ វគ្គសិក្សា ESP គឺជាវគ្គសិក្សាភាសាអង់គ្លេសសំរាប់ជួយនិស្សិតថ្នាក់បរិញ្ញាបត្រលើជំនាញ ឯកទេស និងអាជីពរបស់ពួកគេនាពេលអនាគត។ ការឆ្លើយតបទាំងអស់របស់អ្នកនឹងត្រូវបានរក្សាទុកជាអនាមិក ទាំងស្រុង។

**A. ព័ត៌មានផ្ទាល់ខ្លួន**

សូមគូសរង្វង់លើលេខនៃការឆ្លើយតបខាងក្រោម (ជម្រើសអាចច្រើនជាងមួយ)៖

**A1. តួនាទី៖**

- 1.  ថ្នាក់គ្រប់គ្រង
- 2.  បុគ្គលិក

**A2. ជំនាញ៖**

- 1.  ជីវវិទ្យា
- 2.  គីមីវិទ្យា
- 3.  ព័ត៌មានវិទ្យា
- 4.  បរិស្ថាន
- 5.  គណិតវិទ្យា
- 6.  រូបវិទ្យា

B.ការយល់ឃើញទូទៅអំពីតម្រូវការភាសាអង់គ្លេសសម្រាប់និស្សិតថ្នាក់បរិញ្ញាបត្រនៅ RUPP

សូមគូសរង្វង់លើលេខនៃការឆ្លើយតបខាងក្រោម៖

ខ្ញុំគិតថា...	យល់ស្របទាំងស្រុង (1)	យល់ស្រប (2)	មិនយល់ស្រប (3)	មិនយល់ស្របទាល់តែសស់ (4)	មិនដឹង (5)
B1.មុខវិជ្ជាភាសាអង់គ្លេសពិតជាចាំបាច់សម្រាប់និស្សិតថ្នាក់ បរិញ្ញាបត្រនៃមហាវិទ្យាល័យវិទ្យាសាស្ត្រនៅ RUPP ។	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B2.ភាសាអង់គ្លេសពិតជាចាំបាច់សម្រាប់ការងាររបស់និស្សិតថ្នាក់បរិញ្ញាបត្រនៃមហាវិទ្យាល័យវិទ្យាសាស្ត្រនៅRUPPនាពេលអនាគត ។	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B3.ភាសាអង់គ្លេសពិតជាចាំបាច់សម្រាប់ឯកទេសរបស់និស្សិតថ្នាក់បរិញ្ញាបត្រនៃមហាវិទ្យាល័យវិទ្យាសាស្ត្រនៅ RUPP ។	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B4. គួរតែមានវគ្គសិក្សាESPសំរាប់និស្សិតថ្នាក់បរិញ្ញាបត្រ នៃមហាវិទ្យាល័យវិទ្យាសាស្ត្របន្ថែមពីលើកម្មវិធីភាសា អង់គ្លេសនាពេលបច្ចុប្បន្ននៅ RUPP ។	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C. ការវិភាគអំពីតម្រូវការ

C1. មាតិកាសម្រាប់វគ្គសិក្សា ESP

សូមគូសរង្វង់លើលេខនៃមាតិកា រឺសរសេរក្នុងចន្លោះខាងក្រោម ដែលអ្នកគិតថាគួរតែបញ្ចូល នៅក្នុងវគ្គសិក្សាESP ។ ( ជម្រើសអាចច្រើនជាងមួយ )

C1.1. មាតិកាសម្រាប់ការនិយាយ គួរតែបញ្ចូលនូវ...

- 1.  ជំនាញធ្វើបទបង្ហាញ
- 2.  ជំនាញធ្វើការពិភាក្សាក្នុងក្រុម
- 3.  ជំនាញធ្វើការពិភាក្សាដេញដោល (debate)
- 4.  ជំនាញធ្វើការបញ្ចេញសំឡេង
- 5.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

C1.2. មាតិកាសម្រាប់ការស្តាប់ គួរតែបញ្ចូលនូវ...

- 1.  យុទ្ធសាស្ត្រក្នុងការស្តាប់ ( ឧ. ជំនាញស្តាប់រកព័ត៌មានគោល, ជំនាញស្តាប់រកព័ត៌មានលម្អិត ។ល។ )
- 2.  យល់ដឹងពីការបញ្ចេញសំឡេង ( accents )
- 3.  ជំនាញក្នុងការកត់ត្រា
- 4.  ការយល់ពីចំណុចសំខាន់ៗ ក្នុងការស្តាប់វិទ្យុ និងទូរទស្សន៍
- 5.  ការយល់អត្ថន័យពីការសន្ទនា របាយការណ៍ និងបទបង្ហាញផ្សេងៗ
- 6.  ការស្តាប់សេចក្តីណែនាំ ( ឧ. សេចក្តីណែនាំសម្រាប់កិច្ចការស្រាវជ្រាវ )
- 7.  ការស្តាប់ពីការបង្រៀន
- 8.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

C1.3. មាតិកាសម្រាប់ការអាន គួរតែបញ្ចូលនូវ...

- 1.  យុទ្ធសាស្ត្រក្នុងការអាន ( ឧ.ជំនាញអានរកព័ត៌មានគោល ជំនាញអានរកព័ត៌មានលម្អិត ។ល។ )
- 2.  ជំនាញក្នុងការបង្កើនល្បឿនអាន
- 3.  ជំនាញទូទៅក្នុងការអាន
- 4.  ការអានអត្ថបទឯកទេស ( specialist texts )
- 5.  ការអានសៀវភៅមេរៀន ( textbooks )
- 6.  ការអានអត្ថបទបច្ចេកទេស ( journal articles )
- 7.  ការអានសៀវភៅណែនាំ ( manuals )
- 8.  ការអានសេចក្តីណែនាំសម្រាប់កិច្ចការស្រាវជ្រាវ ( assignments )
- 9.  ការអានអត្ថបទទូទៅ ( ឧ. កាសែត, អ៊ិនធើណែត, របាយការណ៍ ។ល។ )
- 10.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

C1.4. មាតិកាសម្រាប់ការសរសេរ គួរតែបញ្ចូលនូវ...

- 1.  ការសរសេររបាយការណ៍មន្ទីរពិសោធន៍ ( Laboratory reports )
- 2.  ការសរសេររបាយការណ៍អំពីដំណើរទស្សនកិច្ចសិក្សា ( field-trip reports )

3.  ការសរសេរកិច្ចការស្រាវជ្រាវ ( assignments )
4.  ការសរសេរអីមែល
5.  ការសរសេរអត្ថបទផ្សេងៗគ្នា
6.  ការសរសេរសេចក្តីសង្ខេប
7.  ជំនាញកត់ចំណាំ
8.  ផ្សេងៗ ( សូមបញ្ជាក់ ) \_\_\_\_\_

C1.5. មាតិកាសម្រាប់វាក្យសព្ទ ( vocabulary ) គួរតែបញ្ចូលនូវ...

1.  យុទ្ធសាស្ត្រក្នុងវាក្យសព្ទ ( ឧ. ការទាយអត្ថន័យពាក្យក្នុងអត្ថបទ )
2.  ការប្រើប្រាស់វាក្យសព្ទនៅក្នុងបរិបទ
3.  វាក្យសព្ទឯកទេស
4.  ជំនាញក្នុងការបង្កើតពាក្យ និងសន្តានពាក្យ ( ឧ. នាម, កិរិយាស័ព្ទ, គុណនាម, កិរិយាវិសេស )
5.  ការបញ្ចេញសំឡេងលើវាក្យសព្ទឯកទេស
6.  ផ្សេងៗ ( សូមបញ្ជាក់ ) \_\_\_\_\_

C1.6. មាតិកាសម្រាប់វេយ្យាករណ៍ គួរតែបញ្ចូលនូវ...

1.  បច្ចុប្បន្នកាលធម្មតា ( ឧ. នាងក្រោកពីគេងនៅម៉ោង6 ។ )
2.  អតីតកាលធម្មតា ( ឧ. ពួកគេបានទៅទិញឥវ៉ាន់កាលពីម្សិលមិញ ។ )
3.  បច្ចុប្បន្នកាលសំបូរណៈ ( present perfect ) ( ឧ. យើងបានទៅសៀមរាបពីរដង។ )
4.  ការរាយការណ៍ ( reported speech ) ( ឧ. គាត់ត្រូវបានរាយការណ៍ថា... )
5.  ទំរង់អកម្ម ( passive voice ) ( ឧ. លទ្ធផលបោះឆ្នោតត្រូវបានប្រកាសកាលពីម្សិលមិញ ។ )
6.  ឈ្មោះរបស់ល្បះ ( ឧ. ខណៈពេលដែល, នៅពេល, ពីព្រោះ, ដូច្នោះ ។ល។ )
7.  អនុប្រយោគ ( relative clauses: who, which ) ( ឧ គាត់ជាបុរសដែលអាចរត់បានយ៉ាងលឿន ។ )
8.  ផ្សេងៗ ( សូមបញ្ជាក់ ) \_\_\_\_\_

C1.7. មាតិកាសម្រាប់ការយល់ដឹងពីវប្បធម៌បរទេស គួរតែបញ្ចូលនូវ...

1.  ភាពគួរសមនៅក្នុងវប្បធម៌ខុសគ្នា
2.  ការសួរសំណួរនៅក្នុងវប្បធម៌ខុសគ្នា
3.  ចំណេះដឹងពីវប្បធម៌បរទេស
4.  ការរាយការណ៍វប្បធម៌
5.  ភាសាប្រាម ( taboo language )
6.  ការព្រមព្រៀង និងការខ្វែងគំនិតនៅក្នុងវប្បធម៌ខុសគ្នា
7.  ជៀសវាងការយល់ច្រឡំក្នុងការទំនាក់ទំនង ( avoiding miscommunication )
8.  ផ្សេងៗ ( សូមបញ្ជាក់ ) \_\_\_\_\_

C1.8. មាតិកាសម្រាប់ទំនាក់ទំនងពាណិជ្ជកម្ម គួរតែបញ្ចូលនូវ...

1.  ភាពខុសគ្នារវាងភាសាផ្លូវការ និងក្រៅផ្លូវការ
2.  ទំនាក់ទំនងក្នុងការប្រជុំអាជីវកម្ម
3.  ភាសាសម្រាប់ធ្វើបទបង្ហាញ
4.  ភាសាសម្រាប់ធ្វើការណែនាំខ្លួន



5.  ភាសាសម្រាប់ទំនាក់ទំនងទូរស័ព្ទ
6.  ជំនាញសន្ទនា (ឧ. ការនិយាយលេងខ្លីៗ)
7.  ការសរសេររបាយការណ៍ក្នុងវិស័យពាណិជ្ជកម្ម (business report writing)
8.  ការសរសេរលិខិតក្នុងវិស័យពាណិជ្ជកម្ម (business letter writing)
9.  ការសរសេរអ៊ីម៉ែលក្នុងវិស័យពាណិជ្ជកម្ម
10.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

**C2. ភាពចាំបាច់នៃមតិកាសម្រាប់វគ្គសិក្សា ESP**

*សូមគូសរង្វង់លើការឆ្លើយតបអំពីការយល់ឃើញរបស់អ្នកពីភាពចាំបាច់នៃមតិកានិមួយៗ ដែលត្រូវបញ្ចូលទៅក្នុង វគ្គសិក្សា ESP*

C2.1. សម្រាប់ការសិក្សា						C2.2. សម្រាប់ការងារនាពេលអនាគត				
ខ្លាំងណាស់ (1)	ខ្លាំង (2)	ល្មម (3)	ទាប (4)	មិនដឹង (5)		ខ្លាំងណាស់ (1)	ខ្លាំង (2)	ល្មម (3)	ទាប (4)	មិនដឹង (5)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. ការនិយាយ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. ការស្តាប់	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. ការអាន	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. ការសរសេរ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. វាក្យសព្ទ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. វេយ្យាករណ៍	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7. ការយល់ដឹងពីវប្បធម៌បរទេស	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8. ទំនាក់ទំនងពាណិជ្ជកម្ម	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9. ផ្សេងៗ (សូមបញ្ជាក់) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**D. ការវិភាគអំពីស្ថានភាព**

*សូមគូសរង្វង់លើការឆ្លើយតប រឺសរសេរក្នុងចន្លោះខាងក្រោម៖*

**D1. និស្សិតថ្នាក់បរិញ្ញាបត្រ RUPP គួរតែរៀនវគ្គសិក្សា ESP...**

1.  ប្រភេទដូចគ្នាតែមួយសម្រាប់គ្រប់ដេប៉ាតឺម៉ង់ទាំងអស់នៅក្នុងមហាវិទ្យាល័យវិទ្យាសាស្ត្រ ។
2.  ប្រភេទខុសគ្នាសម្រាប់ដេប៉ាតឺម៉ង់នីមួយៗនៅក្នុងមហាវិទ្យាល័យវិទ្យាសាស្ត្រ ។
3.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

**D2. វគ្គសិក្សា ESP គួរផ្តោតលើ...**

1.  ភាសាអង់គ្លេសសម្រាប់ជំនាញ ឯកទេសរបស់និស្សិត ។ (ឧ. ភាសាអង់គ្លេសសម្រាប់ឯកទេសគីមីវិទ្យា)

2.  ភាសាអង់គ្លេសសម្រាប់ការងារ ។
3.  1 និង 2
4.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

D3. វគ្គសិក្សា ESP គួរតែមានរយៈពេល...

1.  1 ឆមាស ។
2.  2 ឆមាស ។
3.  3 ឆមាស ។
4.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

សូមផ្តល់ហេតុផលសម្រាប់ចម្លើយ D3: \_\_\_\_\_

D4. វគ្គសិក្សា ESP គួរតែមាន...

1.  1 កម្រិត ។
2.  2 កម្រិតផ្សេងគ្នា ។
3.  3 កម្រិតផ្សេងគ្នា ។
4.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

D5. លក្ខខណ្ឌនៃកម្រិតភាសាអង់គ្លេសសំរាប់ចូលរៀនវគ្គសិក្សា ESP គឺ ...

1.  កម្រិតដំបូង (elementary) ។
2.  កម្រិតបុរេមធ្យម (pre-intermediate) ។
3.  កម្រិតមធ្យម (intermediate) ។
4.  កម្រិតអ្វីក៏បាន (none) ។
5.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

D6. វគ្គសិក្សា ESP គួរអនុវត្តតាម... (អ្នកអាចគូសជម្រើសបានច្រើនជាងមួយសម្រាប់សំណួរនេះ)

1.  គម្រោងសិក្សាមុខងារ (functional syllabus គឺជាគម្រោងសិក្សាដែលផ្តោតទៅលើការស្នើសុំការតវ៉ា ការយល់ព្រម ។ល។)
2.  គម្រោងសិក្សាមូលដ្ឋានភារកិច្ច (task-based syllabus គឺជាគម្រោងសិក្សាដែលផ្តោតសំខាន់លើ ការបំពេញភារកិច្ច មួយដែលជាភាសាអង់គ្លេសនៅក្នុងកន្លែងការងារ)
3.  គម្រោងសិក្សាមូលដ្ឋានជំនាញ (skills-based syllabus គឺជាគម្រោងសិក្សាដែលផ្តោតសំខាន់លើ យុទ្ធសាស្ត្រ នៅក្នុងការសរសេរ ការអាន ការស្តាប់ និងការនិយាយ
4.  គម្រោងសិក្សាមូលដ្ឋានសមត្ថភាព (competency-based syllabus គឺវគ្គសិក្សាដែលផ្តោតសំខាន់លើ ការអនុវត្ត របស់និស្សិតនៅក្នុងស្ថានភាពមួយក្នុងកម្រិតស្តង់ដារមួយ)
5.  គម្រោងសិក្សាមូលដ្ឋានរួមបញ្ចូលគ្នា (integrated syllabus គឺជាគម្រោងសិក្សាដែលផ្តោតសំខាន់លើ អាទិភាពចាំបាច់ណាមួយក្នុងការសិក្សាជាជាងជម្រើសដាច់ខាតមួយ)
6.  ផ្សេងទៀត (សូមបញ្ជាក់) \_\_\_\_\_

D7. ការវាយតម្លៃការសិក្សាទៅលើនិស្សិតក្នុងវគ្គសិក្សា ESP នេះគួរតែរួមបញ្ចូលនូវ...

(អ្នកអាចគូសជម្រើសច្រើនជាងមួយ សម្រាប់សំណួរនេះ)

1.  ការធ្វើបទបង្ហាញ (presentation) ។

2.  កិច្ចការស្រាវជ្រាវ (assignment) ។
3.  សំណួរ (quizzes) ។
4.  សំណួរពាក់កណ្តាលឆមាស (midterm test) ។
5.  ប្រឡងឆមាស (final exam) ។
6.  កម្រងឯកសារតាមដាន (portfolios) ។
7.  ការចូលរួមក្នុងថ្នាក់ (class participation) ។
8.  វត្តមាន (attendance) ។
9.  របាយការណ៍ស្រាវជ្រាវទស្សនកិច្ច (research reports of workplace visit) ។
10.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

D8. ការចុះឈ្មោះចូលរៀនវគ្គសិក្សា ESP គួរតែ ...

1.  ជាកំហិត (compulsory) ។
2.  ជាជម្រើសមួយ (elective) ។
3.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

សូមផ្តល់ហេតុផលសម្រាប់ចម្លើយ D9: \_\_\_\_\_

D9. ទោះបីការចុះឈ្មោះចូលរៀនវគ្គសិក្សាESP មិនមែនជាការតម្រូវក៏ដោយ ចំនួននិស្សិតដែលចុះឈ្មោះចូលរៀន វគ្គសិក្សានេះប្រហែលជានឹងមាន ...

1.  ចំនួនច្រើន ។
2.  ចំនួនតិច ។
3.  ចំនួនតិចតួចបំផុត ។
4.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

D10. បញ្ហាប្រឈមនៃការអភិវឌ្ឍន៍វគ្គសិក្សា ESP រួមមាន ...

(អ្នកអាចគូសជម្រើសច្រើនជាងមួយសម្រាប់សំណួរនេះ។)

1.  សាស្ត្រាចារ្យភាសាអង់គ្លេសដែលមានចំណេះដឹងខាងជំនាញឯកទេសរបស់និស្សិតតិចតួច ។
2.  និស្សិតដែលមានកំរិតភាសាអង់គ្លេសទាប ។
3.  និស្សិតមានកំរិតភាសាអង់គ្លេសចម្រុះ ។
4.  ខ្វះខាតសម្ភារៈបង្រៀន ។ (ឧ. សៀវភៅESP ឯកសារពាក់ព័ន្ធបង្រៀន)
5.  សម្ភារៈបរិក្ខារបង្រៀននៅមានកម្រិត ។ (ឧ. LCD projector, កុំព្យូទ័រ)
6.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

D11. វិធានការដែលអាចធ្វើបាន ដើម្បីដោះស្រាយបញ្ហាប្រឈម ក្នុងការអភិវឌ្ឍន៍វគ្គសិក្សា ESP រួមមាន...

1.  ការបណ្តុះបណ្តាលសាស្ត្រាចារ្យភាសាអង់គ្លេសសម្រាប់បង្រៀនវគ្គសិក្សា ESP ។
2.  ការបញ្ជូលវិធីសាស្ត្ររៀន និងការបង្រៀនសហការគ្នារវាងនិស្សិត និង សាស្ត្រាចារ្យភាសាអង់គ្លេស ។
3.  ការសហការគ្នារវាងសាស្ត្រាចារ្យភាសាអង់គ្លេស និងសាស្ត្រាចារ្យជំនាញឯកទេស ។
4.  ការប្រើប្រាស់សៀវភៅសិក្សាដែលមានស្រាប់លើទីផ្សារ ។
5.  អញ្ជើញវគ្គនិស្សិតមកផ្តល់បទបង្ហាញ ។

6.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_  
សូមផ្តល់ហេតុផលសម្រាប់ចម្លើយ D12: \_\_\_\_\_

D12. សម្ភារៈបង្រៀននៅក្នុងវគ្គសិក្សា ESP គួរតែមាន...  
(អ្នកអាចគូសជម្រើសច្រើនជាងមួយសម្រាប់សំណួរនេះ។)

1.  សៀវភៅ ESP មានស្រាប់លើទីផ្សារ ។
2.  ឯកសារទូទៅ (ឧ. កាសែត សៀវភៅណែនាំបច្ចេកទេស) ។
3.  ឯកសារចងក្រងដោយសាស្ត្រាចារ្យ (ឧ. hand-outs) ។
4.  ឯកសារចងក្រងដោយវាគ្មិន (ឧ.ឯកសារធ្វើបទបង្ហាញ) ។
5.  ផ្សេងៗ (សូមបញ្ជាក់) \_\_\_\_\_

E. ព័ត៌មានបន្ថែម

E1. ប្រសិនបើអ្នកស្រាវជ្រាវចង់បានព័ត៌មានបន្ថែមពីអ្នក តើអ្នកអាចចូលរួមការសម្ភាសន៍បានដែររឺទេ?  
ការសម្ភាសន៍មានរយៈពេលប្រហែល 30នាទី។ ព័ត៌មានដែលអ្នកបានផ្តល់គឺត្រូវបានរក្សាជាការសម្ងាត់ ។

1.  យល់ព្រម
2.  មិនយល់ព្រម

E2. ប្រសិនបើអ្នកយល់ព្រម សូមបំពេញព័ត៌មានខាងក្រោម៖

ឈ្មោះ: \_\_\_\_\_

លេខទូរស័ព្ទ ទំនាក់ទំនង \_\_\_\_\_

**សូមអរគុណ!**

## **APPENDIX I: Interview questions for academic stakeholders and graduate employees**

### **(English version)**

1. What kind of English skills or abilities do you think most FoS students need, which can assist them with their academic studies and future job? (Could you order them in terms of priority (speaking, listening, reading, writing, and why?)
2. What do you think about incorporating 'business communication' into the ESP courses? Is business communication important and why/ why not?
3. If only one ESP course is offered for all FoS students, what should the objectives and the lessons of this course include?
4. What kind of teaching methods and assessment types do you expect the course should adopt?
5. A lot of lecturers in the questionnaire suggested ESP courses should not be compulsory but elective. What is your view on this?
6. What are your concerns/ challenges for developing ESP courses for FoS students?
7. Do you have any suggestions to resolve those challenges?

*Extra questions: just in case participants have no idea for questions 6 and 7, or do not mention the following points in answers to questions 6 and 7.*

8. *What is your suggestion to deal with the following challenges:*
  - 8.1. *lecturers of English with little or no specialist knowledge of FoS fields*
  - 8.2. *students with low English proficiency not being able to attend the ESP courses*
9. *What do you think about collaborative work between English and subject specific lecturers in ESP teaching?*
10. *What do you think about collaborative teaching and learning between English lecturers and students?*

**APPENDIX J: Interview questions for academic stakeholders and graduate employees**

**(Khmer version)**

**សំណួរសំភាសន៍សម្រាប់និស្សិតសាស្ត្រាចារ្យ និងនិយោគជីក**

1. តើនិស្សិតមហាវិទ្យាល័យវិទ្យាសាស្ត្រភាគច្រើនត្រូវការជំនាញឬ សមត្ថភាព  
ភាសាអង់គ្លេសអ្វីដែលអាចជួយពួកគេក្នុងការសិក្សានិង ការងាររបស់ពួកគេ  
នាពេលអនាគត? (ឧទាហរណ៍ ការនិយាយ ការស្តាប់ ការអាន ការសរសេរ។  
ហេតុអ្វី? សូមរៀបតាមលំដាប់ពីសំខាន់ខ្លាំងទៅមិនសូវសំខាន់។)
2. តើអ្នកយល់យ៉ាងណាចំពោះការបញ្ចូលប្រធានបទ "ការទំនាក់ទំនងផ្នែក ជំនួញ"  
ទៅក្នុងមុខវិជ្ជាភាសាអង់គ្លេសសម្រាប់និស្សិតមហាវិទ្យាល័យវិទ្យាសាស្ត្រ?  
តើវាសំខាន់ទេ? ហេតុអ្វី?
3. ប្រសិនមុខវិជ្ជាភាសាអង់គ្លេសសម្រាប់និស្សិតមហាវិទ្យាល័យវិទ្យាសាស្ត្ររួមមួយ  
ត្រូវបានបង្កើតឡើងនោះ តើគួរតែបញ្ចូលមេរៀននិង ផ្ដោតលើអ្វីខ្លះ?
4. តើមុខវិជ្ជាភាសាអង់គ្លេសនេះគួរតែប្រើប្រាស់នូវវិធីសាស្ត្របង្រៀននិង ការវាយតម្លៃ  
និស្សិតដូចម្តេច?
5. សាស្ត្រាចារ្យភាគច្រើនយល់ថាមុខវិជ្ជាភាសាអង់គ្លេសនេះគួរជាមុខវិជ្ជាជម្រើស  
មួយ។ តើអ្នកយល់ដូចម្តេចចំពោះមតិនេះ?

6. តើមានបញ្ហាប្រឈមអ្វីខ្លះចំពោះការអភិវឌ្ឍវគ្គសិក្សាភាសាអង់គ្លេស

សម្រាប់និស្សិតមហាវិទ្យាល័យវិទ្យាសាស្ត្រ?

7. តើបញ្ហាប្រឈមទាំងនេះគួរដោះស្រាយដូចម្តេច?

សំណួរបន្ថែម: ក្នុងករណីអ្នកឆ្លើយគ្មានយោបល់សម្រាប់សំណួរទី៦និង 7 ឬ

ចំណុចដូចខាងក្រោមមានក្នុងចម្លើយសំណួរ 6 និង 7 ។

8. តើអ្នកមានដំណោះស្រាយអ្វីសម្រាប់បញ្ហាប្រឈមដូចខាងក្រោម:

8.1 សាស្ត្រាចារ្យភាសាអង់គ្លេសមានចំណេះដឹងជំនាញឯកទេស តិចតួចឬគ្មាន

8.2 និស្សិតមានជំនាញភាសាអង់គ្លេសទាបមិនអាចចូលរួមវគ្គសិក្សាភាសា

អង់គ្លេសនេះ

9. តើអ្នកយល់ដូចម្តេចចំពោះការសហការគ្នារវាង សាស្ត្រាចារ្យភាសា អង់គ្លេសនិង

សាស្ត្រាចារ្យឯកទេសក្នុងការបង្រៀនវគ្គភាសាអង់គ្លេសនេះ?

10. តើអ្នកយល់ដូចម្តេចចំពោះវិធីសាស្ត្របង្រៀន សហការរវាងសាស្ត្រាចារ្យ

ភាសាអង់គ្លេសនិង និស្សិតចំពោះវគ្គភាសាអង់គ្លេសនេះ?

## **APPENDIX K: Interview questions for employers (English version)**

1. Could you tell me what kind of tasks (jobs/activities) do your employees engage in that would require English skills?
2. Do you think these tasks should be taught in the ESP courses? Why? Why not?
3. What kind of English skills do the graduate employees lack based on your experience working with them?
4. What kind of teaching methods should be adopted for the ESP courses?  
(lectures from employers...)
5. What kind of assessment should be adopted for the ESP courses? (Examples: role plays-exams, portfolio, presentations, speaking tasks)
6. What do you think about incorporating 'business communication' into the ESP course? What are some important aspects of business communication? Are these skills important? (Provide examples: writing letters, writing emails, speaking on the phone etc?)
7. If university offered only one Faculty general ESP course (one course fits all) for all FoS undergraduate students, what should be the objectives of this course?



**APPENDIX L: Interview questions for employers (Khmer version)**

**សំណួរសំភាសន៍សម្រាប់និយោគជិត**

1. តើមានភារកិច្ចអ្វីខ្លះ (ការងារ / សកម្មភាព) ដែលតម្រូវឱ្យបុគ្គលិករបស់អ្នក  
ប្រើប្រាស់ភាសាអង់គ្លេស?
2. តើភារកិច្ចទាំងនេះត្រូវតែបញ្ចូលទៅក្នុងវគ្គសិក្សាភាសាអង់គ្លេសថ្មីទេ? ហេតុអ្វី?
3. តាមបទពិសោធន៍របស់អ្នកធ្វើការជាមួយពួកគេ តើជំនាញភាសាអង់គ្លេសអ្វីខ្លះ  
ដែលពួកគាត់ខ្វះខាត?
4. តើវគ្គសិក្សាថ្មីនេះត្រូវប្រើប្រាស់វិធីសាស្ត្របង្រៀនអ្វីខ្លះ?
5. តើវគ្គសិក្សាថ្មីនេះត្រូវប្រើប្រាស់ការវាយតម្លៃ/ ការធ្វើត្រួតពិនិត្យដូចម្តេច?
6. តើវគ្គសិក្សាថ្មីនេះត្រូវតែបញ្ចូលមេរៀន “ទំនាក់ទំនងពាណិជ្ជកម្ម” ទេ?  
តើការទំនាក់ទំនងពាណិជ្ជកម្មត្រូវបញ្ចូលជំនាញអ្វីខ្លះ?  
តើជំនាញទាំងនេះសំខាន់ៗទេ?
7. បើសិនជានិស្សិតវិទ្យាសាស្ត្រទាំង៦ជំនាញ រៀនវគ្គសិក្សា អង់គ្លេសថ្មីនេះរួមគ្នា  
តើពេលបញ្ចប់ការសិក្សាវគ្គនេះ និស្សិតគួរមានសមត្ថភាពអាចធ្វើអ្វីខ្លះ?

**APPENDIX M: Institutional approval letter**



**ព្រះរាជាណាចក្រកម្ពុជា**  
**ជាតិ សាសនា ព្រះមហាក្សត្រ**


**សាកលវិទ្យាល័យភ្នំពេញ**  
**Royal University of Phnom Penh**

April 22, 2014

Dear Mr Korop Khat:

Please be advised that we have reviewed your research proposal and grant permission for you to conduct your research titled, “A needs analysis study for the development of English for undergraduate specialisation courses: A case study of a Cambodian university” at the Royal University of Phnom Penh.

We will provide within our capacity any assistance necessary for the implementation of this research study.

Please do not hesitate to contact us if you have any question. 



Sincerely,

H.E. Dr. Chet Chealy  
Rector

## APPENDIX N: Research ethics approval

Approval has been renewed and granted until 04 August 2017



2 May 2014

APPROVED - Project number 14-108

Mr Korop Khat  
Faculty of Arts & Design  
University of Canberra  
Canberra ACT 2601

Dear Korop,

The Human Research Ethics Committee has considered your application to conduct research with human subjects for the project titled **A needs analysis study for the development of English for undergraduate student specialisation courses: A case study of a Cambodian university**

**Approval is granted until 5 August 2015.**

The following general conditions apply to your approval.

These requirements are determined by University policy and the **National Statement on Ethical Conduct in Human Research** (National Health and Medical Research Council, 2007).

<b>Monitoring:</b>	You must, in conjunction with your supervisor, assist the Committee to monitor the conduct of approved research by completing and promptly returning project review forms, which will be sent to you at the end of your project and, in the case of extended research, at least annually during the approval period.
<b>Discontinuation of research:</b>	You must, in conjunction with your supervisor, inform the Committee, giving reasons, if the research is not conducted or is discontinued before the expected date of completion.
<b>Extension of approval:</b>	If your project will not be complete by the expiry date stated above, you must apply in writing for extension of approval. Application should be made before current approval expires; should specify a new completion date; should include reasons for your request.
<b>Retention and storage of data:</b>	University policy states that all research data must be stored securely, on University premises, for a minimum of five years. You must ensure that all records are transferred to the University when the project is complete.
<b>Contact details and notification of changes:</b>	All email contact should use the UC email address. You should advise the Committee of any change of address during or soon after the approval period including, if appropriate, email address(es).

Yours sincerely  
Human Research Ethics Committee

**Hendryk Flaegel**  
Research Ethics & Compliance Officer  
Research Services Office  
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