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從教師與學生觀點探討博士生之英語需求

A Needs Analysis of English: Perceptions of Faculty and Doctoral



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中文摘要

英語已經成為國際間各項交流的共通語言，學術研究領域自然也不例外。為了追求學術研究上的發展，非英語系國家的研究者也須具備足夠的英語能力。事實上，以台灣的現況來看，博士班學生的英語能力不足，一直是十分嚴重的問題，甚至可能因此而限制了學生在學術研究上的成就與表現。儘管如此，在英語學習上，目前教育單位所提供給博士生的幫助似乎非常有限。為了能有效增進博士生的英語能力，首先我們必需了解他們的英語需求為何，以進一步針對學生的需要，提供適當的協助。因此，這份研究旨在深入了解博士班學生英語上的需求，並以聽、說、讀、寫這四項語言技巧分別討論。須註明的是，本文中所謂的「需求 (needs)」，研究者將它定義為：需要 (necessities)、不足 (lacks)，以及個人期望 (wants)。這三者也就是所謂的目標需求 (target needs)，或稱為結果導向需求 (product-oriented needs)。在本研究中，研究者採用問卷調查的方式，蒐集量性與質性資料。研究對象為國內一所研究型大學的一百四十八位博士班學生與五十六位專任教師。問卷內容大要如下：(一) 英語能力的重要性；(二) 學生使用英語的情境；(三) 博士生英語能力的評量；(四) 對英語課程設計的期許；(五) 其他英文方面的協助。研究者採用描述性統計、*t* 考驗、變異數分析，和卡方考驗來分析量性資料；質性資料則由研究者詳細檢視後，加以分類整理，以供進一步的分析與討論。研究結果顯示，讀、寫能力在博士生研究生涯中，較常被使用也較為重要；而聽、說能力則在學生未來的工作上，扮演較為重要的角色。此外，

由於學生一般在英語聽、說技巧上的能力較弱，這兩項語言能力是他們所急於增進的。學生們所建議的課程中，有大半都與聽、說能力有關。最後，設定英語畢業門檻與專業課程以英語授課這兩項議題，在文中也有相關的討論。總而言之，研究者期盼這份研究能對提升博士生的英語能力有所幫助。課程設計者或可根據研究中的發現，修訂目前的英文課程，或提供其他學生所需要的協助。



ABSTRACT

As English has become the *lingua franca* for international communication, in order to pursue academic achievements, nonnative-speaking researchers are required to have adequate communication competence in English. In Taiwan, doctoral students' deficiency in English has been widely considered as a serious problem, which might hinder their academic development. However, limited English courses or related resources have been provided for them. To bridge the gap, a well-conducted needs analysis should be necessary and helpful. Therefore, the present study aims to investigate doctoral students' English needs in terms of listening, speaking, reading and writing skills. Needs here are defined as *necessities*, *lacks*, and *wants*, which have been conventionally referred as *target needs* or *product-oriented needs*. This study surveyed 148 doctoral students and 56 teachers in a research-oriented university in Taiwan, regarding: (1) importance of English, (2) contexts of English use, (3) evaluation of doctoral students' English ability, (4) expectations of curriculum design, and (5) other help on English. The quantitative data of the questionnaires were analyzed through descriptive statistics, *t*-test, ANOVA, and Chi-square analysis, while the qualitative data was examined by the author, and categorized into proper groups for further analysis. Results show that reading and writing skills were more important and more often used in doctoral study, while listening and speaking ability were in greater demand in students' future career. In addition, due to doctoral students' relatively poor performance in listening and speaking, more training on these two skills were highly suggested by the students. The issues of graduation requirement in English and lecturing content courses in English were also discussed. To conclude, findings of this study should help academic institutes design new or modify the existing English curriculum and learning resources for doctoral students.

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CHAPTER 1

INTRODUCTION

English is now acknowledged as the most frequently used language of international communication (McArthur, 2003; Sano, 2002; Seidlhofer, 2005; Tardy, 2004; Zhu, 2003). This trend of globalization has also been reflected on academic research, especially in the fields of science and technology (Flowerdew, 1999; Kushner, 1997). Therefore, nonnative-speaking (NNS) researchers, in order to pursue academic achievements, are required to have adequate English communication ability (Flowerdew & Peacock, 2001; Kennedy, 2001; Wood, 2001).

However, for NNS researchers, the language problem often brings them great challenges. Limited training in academic English has been indicated to restrain their performance in academic development (Kushner, 1997). Though both a field's content knowledge and language training are deemed essential to researchers' academic development, time devoted to language learning, in comparison to that to content knowledge, is far slimmer (Jenkins, Jordan & Weiland, 1993; Orr & Yoshida, 2001). Moreover, previous studies have revealed that although most NNS researchers recognize the importance of English, few of them are satisfied with their own English ability (Kuo, 2001; Orr & Yoshida, 2001; Tsui, 1991). Deficiency in English often forces their research to progress at a slow pace and demands much more efforts on communication.

How to help these professionals, in addition to their expertise knowledge, become proficient in English has hence become a critical issue. English for Specific Purposes (ESP), to meet these particular English needs, has risen since 1960s as a new and developing branch in the English Language Teaching (ELT) circle (Dudley-Evans & St John, 1998; Strevens, 1988). In contrast to learning General English (GE), ESP

learners have specific, utilitarian reasons for learning a language (Hutchinson & Waters, 1987; Robinson, 1984). Learners' particular needs or interests have a great influence on deciding what to learn and even how to learn. Therefore, needs analysis plays a key role in ESP research. Based on the assumption that learners' language needs can be specified, needs analysis directs all subsequent activities in ESP, such as course design, material selection, teaching and learning, and evaluation (Orr, 2001; Widdowson, 1981).

There have been a number of needs analysis studies conducted in academic settings. Many of them focused on language needs of college students, mainly surveying language skills or tasks required in classes (e.g., Chia, Johnson, Chia & Olive, 1998; Freeman, 2003; Horowitz, 1986; Johns, 1981; Ostler, 1980; Pritchard & Nasr, 2004; Zughoul & Hussein, 1985). Some other studies targeted graduate students' or scholars' English needs or language problems (e.g., Beatty & Chan, 1984; Orr, Smith & Watanabe, 2003; Orr & Yoshida, 2001; Seferoglu, 2001; Tarantino, 1988). Among them, English writing ability has drawn much of the attention (e.g., Allison, Cooley, Lewkowicz & Nunan, 1998; Casanave & Hubbard, 1992; Cho, 2004; Dong 1998; Jenkins, Jordan & Weiland, 1993; Kuo, 2001; Wang & Bakken, 2004). However, so far as indicated by Kuo (2001), few studies have been conducted on language needs of Chinese graduate students and researchers.

In Taiwan, doctoral students' deficiency in English has been widely considered as a serious problem in their academic development (Kuo, 2001). Though there has been increasing attention paid to this issue, limited efforts have been made to improve doctoral student's English ability. In an investigation of Taiwan's five national universities, it was found that only a small number of institutes in these universities have provided English training for doctoral students (Table 1.1). The majority of these institutes are in the science-related fields. It seems that a discrepancy has existed

between students' English needs and current efforts devoted to meet them.

Table 1.1

English Courses Offered in Five National Universities in Taiwan

University	Department/Institute	English course
National Taiwan University	Chemical Engineering	• Thesis Writing in English
	Civil Engineering	• Advanced Writing for Engineering Majors
	Geosciences	• Scientific English
	Applied Mechanics	• Technical English
National Tsing Hua University	Language Center	• Technical English Writing
		• English for Science and Technology
		• Academic Writing for Graduates Students
National Chiao Tung University	Architecture	• English for Architecture Majors
	College of Electrical & Computer Engineering and College of Computer Science	• Technical English Writing Skills
		• English Listening and Speaking Skills
		• English Reading and Comprehension Skills • English Oral Presentation Skills
National Cheng Kung University	Taiwanese Literature	• Academic English
	Materials Science & Engineering	• Technical English Writing
		Microbiology & Immunology
	Chinese Literature	• English for Chinese Studies
	History	• English for Advanced Historical Studies
National Central University	Language Center	• English Scientific & Technical Writing
	Mechanical Engineering	• English Scientific & Technical Writing

Note. The data are from each school's curriculum schedule for the first semester in 2005.

In Kuo's (2001) survey of doctoral students and faculty in an academic institute in Taiwan, she found that reading and writing were generally regarded to be more important than listening and speaking in doctoral study. However, since Kuo's study was mainly concerned about academic writing, the exact roles these four English skills play in doctoral students' academic endeavor were not further discussed. It

should also be noticed here that ranking reading and writing more important does not necessarily deny the importance of listening and speaking in doctoral study. The present research, therefore, extending Kuo's investigation, expands the needs analysis scope beyond the writing needs and problems of Ph.D. students to include all the four language skills. It is hoped to have a comprehensive understanding about doctoral students' English needs in terms of reading, writing, listening, and speaking, and the different degree of importance of the four language skills to doctoral students.

Specifically, needs in the present research are defined as *necessities*, *lacks*, and *wants* (Hutchinson & Waters, 1987), which have been conventionally referred to as *target needs* or *product-oriented needs* (Brindley, 1989). Both *subjective needs* (viewpoints of students) and *objective needs* (viewpoints of teachers) (Brindley, 1989) were gathered to ensure a thorough description of doctoral students' language needs. Insights gained in the study should adequately answer the following research questions:

1. How important is English to doctoral students? What is the relative importance of the four language skills for them?
2. What are the contexts in which doctoral students use English? What are students' self-evaluation of their performance in these contexts and teachers' evaluation of the importance of these contexts?
3. How do teachers evaluate doctoral students' current English proficiency and how do students self-evaluate their own English proficiency? What are the skills students want to improve most and what are the skills teachers expect students to improve?
4. Are current courses offered by the school satisfactory to doctoral students? What courses are suggested to be offered to doctoral students?
5. What kind of help or resources other than English courses is expected to be

provided to doctoral students? Do graduation requirement in English and lecturing content courses in English help improve their English ability?

As proposed by Tudor (1996), needs analysis is fundamentally conducted to help bridge the gap between learner needs and the curricula/programs designed for them. Before any course design or material development activities, carrying out a well-designed, detailed needs analysis should be the prerequisite (Johns & Dudley-Evans, 1991; Orr, 2001). Therefore, it is hoped that the present needs analysis research could shed some light on the future English curriculum design for Chinese doctoral students, and offer useful information for English instructors or ESP practitioners.



CHAPTER 2

LITERATURE REVIEW

In this chapter, literature related to the present needs analysis study is presented. There are three main issues included: English for specific purposes (ESP), needs analysis, and English needs of postgraduates/scholars. Since the needs analysis concept was developed from ESP research, the author first introduces the rise of ESP and its features. Then, the importance and the focus of needs analysis, and the accompanying needs definition issue are described. Finally, previous studies on language needs of graduate students and academics are summarized. Findings from different studies are further compared and discussed.



ENGLISH FOR SPECIFIC PURPOSES

As western countries (specifically the UK and the USA) have dominated the world economy and politics, English has become the international communication medium for both economy and science (Kenny, 2001; McArthur, 2003; Sano, 2002; Seidlhofer, 2005; Tardy, 2004; Wood, 2001; Zhu, 2003). To gain access to the technology or resources of the English-speaking countries, many nonnative speakers of English have devoted a lot of time to the acquisition of English competence (Flowerdew & Peacock, 2001; Widdowson, 1997). However, traditional GE teaching has meanwhile been proven not very effective for people who have specific language needs (Orr, 2001). To bridge the gap, ESP research and practice which provide specialized training to meet special needs has begun since the 1960s. In the following sections, the ESP approach was examined closely through: the background of ESP, from GE to ESP, branches in ESP, and the characteristics of ESP.

The Background of ESP

To better understand ESP, Hutchinson & Waters (1987) described three major trends in relation to the rise of this approach: the demands of a brave new world, a revolution in linguistics, and focus on the learner.

1. The demands of a brave new world:

After English has become the international language for economy and technology, a new generation of learners with utilitarian language needs has appeared. Under this context, language teaching, as claimed by Strevens (1988), has become “more instrumental” and “less cultural.” English serves more like a tool with which nonnative speakers of English can approach the modern world, nourished with abundant resources there. The phenomenon is also reflected on the international academic discourse. Because most international conferences or journals are held or published in English, NNS researchers, to share their innovations with their international counterparts or to gain recognition from them, have to write in English. That is, only if their works are published in English, will they be possibly read and cited by other researchers around the world (Kennedy, 2001; Wood, 2001). The shift from cultural perspectives to instrumental perspectives in language learning has also affected the basis of course design. It is language itself rather than literature that determines what and how to teach (Strevens, 1988).

2. A revolution in linguistics:

In contrast to previous focuses on the description of language use, or the grammar, recent linguistic studies have become more concerned about how English is used in actual communication contexts. Based on the assumption that language should be used differently in different contexts, it is believed that features of English use in a particular situation can be identified. Findings about these specific language usages should offer valuable information for subsequent course design (Flowerdew &

Peacock, 2001b). As what Orr (2001) stressed, "... English is not a monolithic whole, but rather is consisted of countless components and combinations that have evolved over time to fulfill communication needs situated within a wide range of social, academic, and work-related contexts." Different people may encounter different language contexts, and need to acquire particular language skills to perform the required communication tasks specific to that context. Therefore, to make language courses effectively and efficiently meet learners' needs, analyzing language features of target situations/tasks should be the prerequisite for any course design activities.

3. Focus on the learner:

The learner-centeredness concept in ESP is greatly affected by educational psychology's development on learner issues. In this perspective, learners' attitudes toward learning are believed to have an enormous impact on learning efficacy. It is asserted that ensuring provided courses to meet learners' needs should positively increase learning motivation. This learner-centered assumption has further led to the development of needs analysis in ESP (Strevens, 1988). More issues in the learner-centered education are discussed in the needs analysis section.

From GE to ESP

In contrast to GE learning, in which language itself, culture and literature are the focuses, ESP learners study English mainly for pragmatic, instrumental purposes. Language functions like a bridge leading them to the intended knowledge or skills (Robinson, 1984). Unlike GE learning, ESP courses do not follow the traditional "present, practice, perform" process (Dudley-Evans & St. John, 1998) in teaching, but adopt a "deep-end strategy" in which learners are put into "the deep end of a pool" (i.e. the language requirement of the target context) to see the gap between where they are and where they are required to reach (Orr, 2001). It is the awareness of the learner

needs (the gap) that characterizes ESP (Robinson, 1984). However, this does not imply that GE learners do not have needs for learning. It is merely the *awareness* of learning purposes that actually differentiates ESP learners from their GE counterparts (Hutchinson & Waters, 1987).

In defining ESP, Hutchinson & Waters (1987) emphasized that ESP should not be seen as “a product” but rather “an approach” to specific language learning. ESP does not formulate a brand new language or methodology, nor does it develop any special teaching materials. In this approach, it is the learner needs that determine all the course design and instructional activities. As contended by Robinson (1984), what is special or specific in ESP is not the language itself, but rather the reasons for learners to learn English.

A more detailed, widely adopted description about ESP was provided by Strevens (1988). He maintained that to well define ESP, we have to distinguish between “four absolute and two variable characteristics” of this approach:

1. Absolute characteristics of ESP

ESP consists of English language teaching which is:

- design to meet specified needs of the learner;
- related in context (i.e., in its themes and topics) to particular disciplines, occupations and activities;
- centered on the language appropriate to those activities, in syntax, lexis, discourse, semantics, etc.;
- in contrast with “General English”

2. Variable characteristics of ESP

ESP may be, but is not necessarily:

- restricted as to the language skills to be learned (e.g. reading only; speech recognition only, etc.)

-- taught according to any pre-ordained methodology (i.e., ESP is not restricted to any particular methodology—although communicative methodology is very often felt to be the most appropriate). (p. 1)

Based on Hutchison & Waters' and Stevens' definition, ESP could be summed up as an approach to English learning which undergoes careful research and design to meet the needs of an "identifiable group" of people within a specific learning context (Johns & Dudley-Evans, 1991).

Branches in ESP

Under ESP there are still a bundle of branches, for example, English for Academic Purposes (EAP), English for Occupational Purposes (EOP), or English for Science and Technology (EST). According to the functions of ESP, these branches can be generally divided into two major groups, that is, EAP and EOP. Each group is sub-divided by its content areas, for example, EST, English for Business and Economics (EBE), and English for Social Science (ESS) (Flowerdew & Peacock, 2001a; Hutchinson & Waters, 1987; Kuo, 1993; Robinson, 1984). However, if we browse the cumulated ESP research in the history, it is obvious that ESP research has been overwhelmingly dominated by the EAP branch, or more specifically, the EST sub-branch. The majority of ESP material development, course design and research were actually conducted in the academic setting (Johns & Dudley-Evans, 1991; Johns & Dudley-Evans, 1998). Nevertheless, we should also be aware that the differentiation between the two main branches, EAP and EOP, is not without confusion. Most of the time, learning efforts made in school is regarded in certain aspects as the preparation for learners' future work (Flowerdew & Peacock, 2001a). Under this consideration, the author did not use the classification of EAP or EOP to define the present need analysis research, but rather took it as merely an indispensable

activity within general ESP research or practice.

The Characteristics of ESP

Strevens (1988) provided a list of claims for ESP:

- ESP, being focused on the learner's needs, wastes no time;
- ESP teaching is perceived as relevant by the learner;
- ESP is successful in imparting learning;
- ESP is more cost-effective than General English. (p. 2)

Although Strevens added that teacher preparation should also be taken into consideration, according to these claims, ESP, targeting learners' needs, should be efficient, effective, and pragmatic.

Since ESP under the time pressure deals exclusively with learner needs, ESP courses should always be conducted with a clear purpose—for example, helping learners successfully play certain roles in a learning or working context (Robinson, 1984). Moreover, the existence of a purpose in ESP learning and teaching also implies that the purpose can be perceived, stated, and examined. Robinson further expanded the point that the ability for learners to indicate their learning purposes should entail the following three elements in defining ESP:

1. The time factor: What accompanies a language course with specific purposes is often the time pressure. Therefore, this kind of courses tends to be rather intensive.
2. The age of the learner: Learners of ESP are usually adults or near adults. These so-called “post-beginners” might have undergone several years of general language education in school, and would like to further a certain part of knowledge of the language, which is beneficial for their present work or study.
3. The awareness of the need: Since ESP learners are able to express their learning purposes, they must have a clear picture or the awareness of their language needs.

This fact implies not only that learners' reasons for learning should always guide instructional activities but also that ESP courses are by nature learner-centered.

NEEDS ANALYSIS

With the development of Munby's (1987) Communication Needs Processor, needs analysis has drawn researchers and teachers' attention in language learning since the 1970s (Braine, 2001; Hutchinson & Waters, 1987). Through Munby's model, learners' language needs are portrayed in detail according to communication purposes, communicative settings, the means of communication, language skills, functions, structures, etc. It was purported that needs of any group of people could be adequately defined by using this model. Though many researchers criticized Munby for his emphasizing only the target situation analysis (Flowerdew & Peacock, 2001a; Hutchinson & Waters, 1987), this model indeed plays an important role in accelerating the prosperity of ESP, especially the development in needs analysis (Braine, 2001).

Given that ESP courses should be designed based on learners' particular language needs, needs analysis has been regarded as an essential activity in ESP. Results of a needs analysis study have a great impact on the following ESP activities, such as course design, materials selection, teaching and learning, and evaluation (Orr, 2001; Strevens, 1988). Generally, the aim of an ESP course is to equip learners with sufficient language skills which are required in performing particular roles in a specific context. Therefore, as claimed by Hutchinson & Waters (1987), the first step of ESP course design should be "identifying the target situation," and then further analyzing the language features used in that context. Kuo (2001), supplementing Hutchinson & Waters' point of view, noted that to teach learners with specific purposes in learning English, researchers/teachers should not only deal with the target

situation analysis (needs analysis) but also identify the areas which students have the most difficulty with (problem analysis). That is, needs analysis and problems analysis are both essential to ESP course design (Johns & Dudley-Evans, 1991; Brindley, 2001). However, these statements about needs analysis also reflect a widely perceived confusion that though researchers generally consider identifying learner needs (i.e. needs analysis) to be obligatory in ESP course design, there is still a huge controversy over the definition of learner needs (Stufflebeam, McCormick, Brinkerhoff & Nelson, 1985; West, 1994; Cameron, 1998; Richterich, 1983).

In the following sections, we will take a closer look at the characteristics of needs analysis, the definition issue of needs and the learner-centered perspective.

The Characteristics of Needs Analysis

According to Witkin & Altschuld (1995), conducting needs analysis is meaningful under the assumption that learners' specific needs have not been properly concerned and addressed. Needs analysis here is defined as an organized, ongoing process through which learners' present proficiency, required proficiency, and the gap between these two levels are described. Results of needs analysis are used for "setting priorities" and "making decisions" in program design or evaluation. According to this definition, several characteristics of needs analysis are revealed. First, needs analysis involves a systematic data collection procedure. All kinds of related information, objective or subjective, should be taken into consideration to ensure a complete and precise description (Brown, 1995; Berwick, 1989). Second, since time will never be enough for learners to acquire all language skills, the priority of what to teach first should be made (Brindley, 1989). Third, as bases or references for decision making, needs analysis is mainly concerned about future-oriented questions. Therefore, the focus is mainly on *what to attain* rather than *how to reach it*, although needs analysis

may sometimes help to decide the method (Stufflebeam, McCormick, Brinkerhoff & Nelson, 1985; Witkin & Altschuld, 1995). Finally, implicit in the definition of needs analysis is still the problematic issue about what needs really are. Though Witkin & Altschuld, along with many other researchers (e.g., Kaufman, Rojas, & Mayer, 1993; Berwick, 1989), conventionally defined needs as the gap or discrepancy between “the present state” and “the desired state”, the controversy over needs definition has continued, leading to extensive discussion (Brindley, 1989). A more detailed description of the needs definition issue is presented in the next section.

Viewing needs analysis with a larger scope, Tarone & Yule (1989) suggested that needs analysis studies can be categorized into the following four levels:

1. The global level: At this level, researchers have to carefully identify learners’ purposes for language learning. It should come with a detailed description about the target situation, in which learners are required to use the language, and the related activities carried out in that context.

2. The rhetorical level: This level deals with “the organization of information in the discourse which occurs within any given situation.” Efforts are made to identify the organization of the information learners have to manage in a specific context, or to analyze the organization of an interaction according to linguistic functions.

3. The grammatical-rhetorical level: Under the assumption that different discourses may organize differently, studies at this level aim to verify the corresponding linguistic forms used to fulfill a discourse organization. Usually the rhetorical and grammatical-rhetorical level analyses are conducted together. Researchers will first identify the organization of a particular discourse, and then try to find out which and how linguistic forms contribute to that.

4. The grammatical level: At this level, the analysis is mainly numerical. Researchers are interested in the frequency a certain grammatical form is used in a particular

communication context.

According to Tarone & Yule's categorization of needs analysis studies, what most researchers meant by needs analysis seems to fall within the global level research. The other levels otherwise correspond to discourse analysis (Brown & Yule, 1983), genre analysis (Swales, 1990), etc. in the ESP expertise. To avoid confusion, in the following discussion, the author likewise adopted the narrow definition of needs analysis, that is, the global level, to define the present needs analysis research.

The Controversy over Needs Definition

Implicit in the perennial controversy over the needs definition is the concern that needs definition has a great impact on needs analysis. To be more specific, the needs analysis content and process are completely determined by how we define learner needs. Therefore, in the very beginning of a needs analysis study, it is very important to first determine what needs definition is adopted to guide the whole process (Stufflebeam, McCormick, Brinkerhoff & Nelson, 1985). A change of definition may affect not only the method used in the study but also the whole data collection procedure.

Brindley (1989) indicated that the ongoing dispute over needs definition has developed into two orientations to needs analysis: product-oriented and process-oriented interpretation of needs. Concepts expressed through these two terminologies seem similar to what Hutchinson & Waters (1987) termed as the "target needs" and the "learning needs" (also see Widdowson, 1981).

1. Narrow/Product-oriented interpretation of need:

Learners' needs are determined according to the target language behavior they are required to perform in a specific situation. Therefore, the analysis of the target situation and related language activities conducted in it is regarded to be necessary for

course/program design.

2. Broad/process-oriented interpretation of need:

Learners' needs are defined as the assistance they need in the learning process to facilitate target skill acquiring. From this perspective, various affective and cognitive factors (e.g. learning attitudes, personality, motivation, etc.) are regarded to be important and influential in learning. What draws researchers' attention is the *method* learners adopt to achieve the target language proficiency.

As suggested in Brindley's (1989) article, since these two different views of needs may bring sheer different results of needs analysis, how to reach a balance between these two approaches is an issue worthy of consideration (Richterich, 1983).

Hutchinson & Waters (1987) further defined target needs (or product-oriented needs) by necessities, lacks, and wants:

1. Necessities: Necessities are derived from the language requirement of target situations. Language competence or skills a learner should possess and use in the target context is regarded as his/her language needs.

2. Lacks: It is generally assumed that before ESP training, learners' current proficiency should be lower than the required proficiency in target situations. The gap between the current and target language proficiency is what Hutchinson & Waters meant by learners' lacks.

3. Wants: Wants refer to learners' self-perception about their needs. Since perception may differ from person to person, sometimes language needs perceived by learners may not match those of ESP practitioners. However, because learning motivation might greatly influence learning efficacy, learners' opinions should deserve equal attention.

The concept of "wants" has further entailed the dichotomy between objective needs (viewpoints from experts/teachers) and subjective needs (viewpoints from

learners) (Hutchinson & Waters, 1987; Brindley, 1989). Similarly, Berwick (1989) used the term, “felt needs,” for needs perceived by learners while “perceived needs” for experts’ or teachers’ interpretation of learner needs. In contrast to perceived needs’ being widely accepted by the public as *objective* viewpoints, felt needs are usually deemed as *subjective*, unsophisticated expressions. As indicated by Hutchinson & Waters (1987), objective and subjective views of needs do not always correspond to each other, which may hence cause negative impact on learning motivation. However, there is no sweeping solution to this problem. What ESP practitioners can do is constantly bear these differences in mind, and make the best decisions according to the different learning contexts and target learners.

A Learner-Centered Approach

As ESP expertise, as well as its core activity, needs analysis, rose in the 60s, language teaching and course planning have tended to more reflect learner needs, and have hence become more learner-centered (Tudor, 1996). Due to its focus on making course/program design more respond to learners’ particular needs, need analysis has been widely recognized as the very occasion which led extensive interest and discussion on the learner-centered issues (Flowerdew & Peacock, 2001a). Based on the learner-centered concept, student participation in the course/program design process has been largely encouraged. It is believed to positively increase learning motivation. Nunan (1989) also emphasized that the attention to learner expectations and related affective factors should contribute as much as what official course specifications can do to promote learning achievements. The common collision between students’ and teachers’ expectations is expected to originate from the exclusion of students’ opinions in the course planning process.

In an extreme learner-centered case, learners may be not only allowed to join

the course/program design process, but also empowered to practically execute the needs analysis research to investigate their own language learning needs (Tarone & Yule, 1989). As claimed by Tarone & Yule, though needs analysis results provided by students may be immature, their research observations should still provide valuable information about the authentic language use in their work or study, which ELT teachers might have never considered before.

Approaching this issue from a theoretical perspective, Johnson (1989), according to participant roles, identified three models in curriculum processing, and discussed their relative strengths and weaknesses:

1. The specialist approach: In this approach, teachers have absolute power in deciding what and how to teach. Since instructional decisions are made by experts in related professional fields, responsibility of course planning process and accompanying success or failure of a program is clearly specified. However, because decisions are made without consultation and communication with other participants in the program, these decisions may not meet learners' needs.

2. The learner-centered approach: In a learner-centered curriculum, learners are allowed to determine learning content according to their needs. Communication and interaction between participants are maximized in that everyone's viewpoints are considered in the decision making process. Consequently, learners' motivation for language learning should meanwhile be increased. However, since there is no one specifically responsible for these decisions, the following course/program evaluation or assessment would be hardly conducted.

3. The integrated approach: Similar to the learner-centered approach, in this approach, all participants are allowed to participate in all stages of course planning. However, the whole decision making process should be led by the qualified people, the experts, to ensure that the curriculum planning mechanism is operated properly.

To sum up, Johnson noted that neither of the extreme approaches described above would be practicable in actual learning contexts. The most effective curriculum process should be the one which integrates the strengths of the both approaches. The compromise between the specialist and learner-centered approach here seems just to respond to what Brindley (1989) stated, the necessity of finding an adequate balance between the objective and subjective needs analysis.

ENGLISH NEEDS OF POSTGRADUATES/SCHOLARS

As indicated above, since ESP research has long been dominated by the EAP branches (Johns & Dudley-Evans, 1991; Dudley-Evans & St John, 1998), most needs analysis studies have also been conducted under academic settings. They can be generally divided into research for undergraduates and research for postgraduates/scholars. Compared with needs analysis for undergraduates (e.g., Horowitz, 1986; Yoshida, 1998; Freeman, 2003; Jacobson, 1986; Deutch 2003; Cameron, 1998; Pritchard & Nasr, 2004; Zughoul & Hussein, 1985; Boshier & Smalkoski, 2002; Chia, Johnson, Chia & Olive, 1998), needs analysis studies for postgraduates/scholars tended to focus more on research-oriented skills (e.g., Seferoğlu, 2001; Beatty & Chan, 1984; Tarantino, 1988; Orr & Yoshida, 2001; Orr, Smith & Watanabe, 2003) with a particular emphasis on the academic writing ability (e.g., Jenkins, Jordan & Weiland, 1993; Canseco & Byrd, 1989; Wang & Bakken, 2004; Allison, Cooley, Lewkowicz & Nunan, 1998; Richards, 1988).

Though NNS postgraduates/scholars who study in western institutes and those in local institutes both pursue their degrees via the English medium, learning contexts and language challenges they face could be rather different (Braine, 2002). Therefore, in the following sections, needs analysis studies in ESL and EFL environments are respectively summarized and discussed.

English Needs in ESL Contexts

Ostler (1980) surveyed both undergraduate and postgraduate students in University of Southern California, analyzing the academic skills students considered to be essential to successfully complete their studies. The results showed not only some major-specific needs but also the distinct differences in the academic skills required by undergraduate and postgraduate students. It was indicated that reading academic papers and journals was more important for students in Soft Science, Engineering and Public affairs than for those in other fields. Reading academic journals and papers, giving talks in class and participating in panel discussions, writing critiques, research proposals and research papers, discussing issues, and asking questions in class were reported as survival skills for graduate students.

Johns (1981) conducted a similar study on determining which skills were essential to nonnative speakers of English success in university classes. She surveyed classroom instructors of both graduate and undergraduate courses in San Diego State University. Though there were some field-specific preferences, it was generally agreed that reading is the most essential of the four skills, followed by listening, writing and speaking in sequence.

Beatty & Chan (1984) surveyed and compared self-perceived English needs of two groups of scholars: those who are beginning their preparation to go abroad (Group A) and those who have been in the U.S. for at least 6 months (Group B). They found that the most noticeable differences lay in the phenomenon that Group B rated almost all the English needs listed on the questionnaire slightly more important than Group A did. On the whole, research-oriented skills were regarded as the most important skills for both groups. They were followed by oral communication skills, such as, participation in class discussions, giving papers and presentations, and asking

and answering questions in class. In view of the different perceptions of the two groups, Beatty & Chan hence suggested that in curriculum planning, both uninitiated and experienced groups' opinions should be consulted. Opinions of those who have experience in the target environment may be even more important.

Another case was Seferoğlu's (2001) investigation on the needs and goals of Turkish government-sponsored students in learning English. With similar research design Beatty & Chan (1984) adopted, Seferoğlu compared the perspectives of two groups of learners—one group of students had already studied for master's or doctoral degrees in the U.S., and the other group of students were attending a specific language program in Turkey before they studied abroad—to explore if the classroom instruction in the language program met students' needs. Findings showed that both groups of students considered their academic needs in learning English to be more important than their everyday or TOEFL needs. However, students in the U.S. were more concerned about productive skills (speaking and writing) while students in Turkey paid more attention to receptive skills (reading and listening). Overall, both groups considered the following skills to be the most needed: (1) communicating fluently with native speakers, (2) expressing themselves precisely in English, (3) writing papers and reports, and (4) speaking fluently in an academic setting. Follow-up interviews further disclosed that although students in Turkey regarded improving academic literacy as the most important thing, to attain a score more than 500 on the TOEFL was presently their primary concern. This explained why current language programs did not give enough attention to oral academic skills, but rather focused on TOEFL skills, devoting much of the time to grammar and vocabulary.

English Writing Needs

Since it is important for scholars to publish internationally and to interact with

researchers all around the world, competence in English writing has become a desperate need (Kennedy, 2001; Wood, 2001). This kind of needs has hence entailed a great number of needs analysis studies on academic writing. For example, Jenkins, Jordan & Weiland (1993) surveyed faculty from six engineering schools in the U.S. about current practices of English writing in engineering programs, and their opinions about graduate students' writing needs. They found that students were expected to acquire writing ability by themselves or after graduation because writing experiences were not considered an integral part of the graduate program. Although the faculty did think that writing was important, and would not accept poor writing, few of them had devoted their time urging students to write regularly. When asked about the time and energy expended on students' theses or dissertations, most of the faculty, as might be expected, indicated a much more investment on NNS students than on their native-speaking (NS) counterparts. Some faculty even admitted that in terms of overall writing ability, they expected less from NNS students and evaluated their writing with a lower standard.

Wang & Bakken (2004) interviewed ESL clinical investigators in the U.S. about their language needs of writing for scholarly publication. Results showed that influenced by their background and previous learning experiences, these scholars had varying abilities in academic writing. Most of them lacked the awareness of their writing deficiencies, which were suggested to come from a lack of familiarity with audience awareness, rhetorical patterns, coherence, tones, and the composition skills and strategies. Wang & Bakken further inferred that a lack of clear criteria for scholarly publication provided by mentors might be the key factor which contributed to the unawareness of their writing deficiencies.

By surveying both graduate students and their advisors, and analyzing student writing, Allison, Cooley, Lewkowicz & Nunan (1998) identified four main problem

Table 2.1

The Diagnostic Assessment Profile

I. Overall Communicative Success

- Purpose Comments:
- Audience (explicitness)
- Organization
- Consistency of argument
- Balance

II. Substantiation (How well own assertions are substantiated and how supporting material is incorporated into the work)

- Use of sources Comments:
- Status of claims
- Citations

III. Discourse Elements/Features (How information is distributed and relationships between concepts and entities are introduced, developed and tracked)

- Signposting Comments:
- Topic development
- Clause structure
- Cohesion
- Grammatical choices
- Lexis



IV. Editing

- Local grammatical forms Comments:
- Spelling
- Punctuation
- Words forms
- Bibliography

Note. Reprinted from “Dissertation Writing in Action: The Development of A Dissertation Writing Support Program for ESL Graduate Research Students,” by D. Allison, L. Cooley, J. Lewkowicz and D. Nunan, 1998, *English for Specific Purposes*, 17, p. 204.

areas in students’ academic writing:

1. A failure to organize and structure the thesis in a way which made the objectives, purpose and outcomes of the research transparent to the reader, and a failure to create a “research space.”

2. A failure to substantiate arguments with evidence from the literature and a tendency to make claims for own research finding which were too strong or overgeneralized.
3. An inability to organize information at the level of the paragraph, to show relationships and to develop texts in functionally appropriate ways.
4. “Local” problems to do with editing, spelling, grammar and bibliographical referencing. (p. 212)

These four main problems of academic writing were further built into a framework termed the Diagnostic Assessment Profile (Table 2.1). They believed that it could be used as a mechanism for diagnosing the strengths and weaknesses of student writing.

English Needs in EFL Contexts

Compared with needs analysis studies in ESL contexts, the amount of those in EFL contexts is relatively small. Among them, Tarantino (1988) surveyed and interviewed Italian professors in the fields of Physics, Chemistry, and Computer Science about their language needs in study or work. According to these professors, English writing was essential for their professional development, so much more efforts were paid to it than to other skills. However, academic writing might also become a source of worry since report writing was found the primary activity scientists were required to do. In terms of the difficulty level, they generally considered listening and writing to be the hardest skills to cope with, while reading to be the easiest one. When attending seminars, lectures, and conferences, these scientists found that understanding idiomatic terminology and expressions, question posing, recognizing local connectives, understanding phrasal verbs, and discriminating vocabulary were the most difficult parts. When writing an English

report, the use of modals, phrasal verbs and correlation adjuncts, connectives, prepositions and articles, noun groups and fronting, verb sequence, paragraphing, time and thought connectives was reported the problematic area.

To better the ESP training program in Japan, Orr & Yoshida (2001) distributed an electronic questionnaire to graduate students, faculty, and company employees who studied or worked in the computer field. The survey revealed that although English played an important role in respondents' academic or professional career, their self-assessment of English ability tended to be relatively low. Aware that weakness in English slowed their work and hindered their communication with others, few respondents were satisfied with their current English proficiency, especially for the graduate student group. For the graduate students, making presentations/speeches in English, and participating in English meetings/discussions, which required good listening and speaking skills, were their very weaknesses.

Orr, Smith & Watanabe (2003) extended Orr & Yoshida's (2001) research, widely surveying graduate students, school faculty, administrators, and working professionals in the fields of computer science and engineering, information science, information technology, and electrical engineering. Survey results confirmed Orr & Yoshida's findings that nearly all informants considered English as an essential tool for their work or studies, and showed a strong commitment to improve their English competence. The most frequent tasks which required English in graduate school and in industry were categorized into the following two groups: (1) reading or writing: papers, announcement, websites, correspondence, tech news, instructions, reports, language, and (2) listening or speaking: presentations, telephone talk, group talk, small talk. The most common requests for English language support were summarized as follows:

1. Provision of answers on demand to questions about English grammar,

vocabulary usage, document formatting and similar topics.

2. Assistance with application or submission procedures that require comprehension of English instructions or the preparation of English documents.
3. Corrective feedback on document drafts.
4. Short, intensive training on various topics of need and interest.
5. Short, intensive training on the unique features of English in science and technology, especially related to specific fields of relevance.
6. Introduction to the English documents commonly written in science and technology, especially related to specific fields of relevance.
7. Short, intensive training in spoken English discourse especially general/professional chat, discussion, negotiation and debate.
8. Provision of listening comprehension training for comprehending multiple varieties of English pronunciations.
9. Corrective feedback and individualized training in preparation for keynote speeches, conference presentations, or other type of oral presentations.
10. Provision of helpful advice on where to find specific types of information in English.
11. Provision of helpful advice on how to learn English more effectively and efficiently. (p. 360)

Kuo (1987) conducted a needs analysis of Chinese university undergraduates, postgraduates, and technical professionals in science fields. She found that gaining access to latest information or technology advancement was the shared motivation for English learning. Most of the undergraduates, postgraduates, and technical professionals regarded that their performance and development on learning, research, or work were greatly influenced by their English ability. Whereas the technical

professionals considered the importance of the four language skills to be sequentially reading, listening, writing, and speaking, for the undergraduates and postgraduates, the sequence was reading, writing, listening, and speaking. When asked about their difficulties in learning English, the graduate students generally considered that writing theses and reports, comprehending technical articles, participating in conferences, slow reading speed, and limited vocabulary were their weaknesses.

In 2001, Kuo, targeting English writing needs of Chinese doctoral students, proceeded with a related needs analysis investigation. She surveyed both Ph.D. students and university faculty about students' writing experience, the role of English, English writing tasks, writing problems, (students') self-perceived/(teachers') perceived English writing ability, and the need for English courses. Similar to Orr & Yoshida's (2001) and Orr, Smith & Watanabe's (2003) findings about Japanese students' English needs, English was also regarded important for Chinese students' current research and future career. However, both the Ph.D. students and faculty to a certain extent were unsatisfied with their (Ph.D. students') current English proficiency. It was found that in writing research papers, the top three most difficult language tasks for doctoral students were: appropriate expression of ideas, correct and proper use of grammar, and diction. This seemed to imply that language usages brought more problems than information organization. Responding to Kuo's (1987) previous research, the doctoral students and faculty both regarded reading and writing skills to be more important than listening and speaking.

Synthesizing the above needs analysis studies, important English tasks selected by NNS graduate students/scholars are summarized in Table 2.2. Difficulties they encountered in using English are listed in Table 2.3. Though NNS researchers' language needs may vary greatly with the different contexts they are in, or their particular background, target situation analysis and problem analysis results provided

Table 2.2

Important English Tasks Selected by NNS Graduate Students/Scholars

Context	Source	English tasks
ESL	Ostler, 1980	<ol style="list-style-type: none"> 1. Reading academic journals and papers 2. Giving talks in class and participating in panel discussions 3. Writing critiques, research proposals and research papers 4. Discussing issues and asking questions in class
	Beatty & Chan, 1984	<ol style="list-style-type: none"> 1. Research-oriented skills (writing research papers and abstracts, reading texts and journals, etc.) 2. Oral communication skills (participation in class discussions, giving papers and presentations, and asking and answering questions in class)
	Seferoğlu, 2001	<ol style="list-style-type: none"> 1. Carrying on face-to-face conversation fluently with a native speaker on everyday topics 2. Expressing oneself precisely in English 3. Writing papers and reports 4. Speaking fluently in an academic setting
EFL	Orr & Yoshida, 2001	<ol style="list-style-type: none"> 1. English e-mail correspondence 2. Reading English reports and technical documents 3. Writing English reports and technical documents 4. Reading English business letters 5. Writing English business letters 6. Making presentations/speeches in English 7. Participating in English meetings/discussions
	Orr, Smith & Watanabe, 2003	<p>Reading or Writing:</p> <ol style="list-style-type: none"> 1. papers (journal, conference, industry, etc.) 2. announcements (product, organization, RFPs) 3. websites (corporate, government, professional) 4. correspondence (e-mail, business letter, cover letter) 5. tech news (newspaper, magazine, web, newsletter) 6. instructions (installation, use, application, submission) 7. reports (tech, feasibility, progress, final, finance, etc.) 8. language (names, equations, technical terminology, collocations, grammatical compounding/imbedding) <p>Listening or speaking:</p> <ol style="list-style-type: none"> 9. presentations (seminar, conference, project, client) 10. telephone talk (project, client; for info, reservations) 11. group talk (discussion, negotiation, disagreement) 12. small talk (with strangers, colleagues, clients)

Table 2.3

Difficulties of NNS Graduate Students/Scholars in Using English (EFL Contexts)

Source	Difficulties
Kuo, 1987	<ol style="list-style-type: none"> 1. Writing reports and research articles 2. Comprehending technical articles 3. Slow reading speed 4. Limited vocabulary 5. Presenting or answering/asking questions in conferences or seminars
Tarantino, 1988	<p>In seminars, lectures and conferences:</p> <ol style="list-style-type: none"> 1. understanding idiomatic terminology and expressions 2. recognizing rhetorical techniques used to communicate causality, comparison, contrast analogy, etc. 3. question posing 4. understanding phrasal verbs 5. discriminating vocabulary <p>In writing:</p> <ol style="list-style-type: none"> 6. use of modals 7. use of phrasal verbs 8. correlations, adjuncts and connectives, preposition and articles 9. noun groups and fronting 10. verb sequence 11. paragraphing 12. time and thought connectives
Kuo, 2001	<p>In writing:</p> <ol style="list-style-type: none"> 1. appropriate expression of ideas 2. correct and proper use of grammar, 3. diction

by previous studies are still valuable for the present research. They serve as a useful reference and data base for the following research design and instrument development of the study.

CHAPTER 3

METHOD

The present study aims to explore the English needs of Ph.D. students in terms of the four language skills. To collect both objective needs and subjective needs (Brindley, 1989), not only doctoral students but also faculty members were included as informants. The method to carry out this study was using a survey, which included close-ended and open-ended questions to collect both quantitative and qualitative data. Two self-designed questionnaires (a student version and a teacher version) were delivered respectively to doctoral students and faculty in a research-oriented university in Taiwan. Students' and teachers' responses to the survey were then compared and analyzed. It is hoped that the present study could depict a comprehensive picture of doctoral students' English needs, and hence generalize useful directions and suggestions for future curriculum development and policy making. The following sections provide a more detailed explanation about the participants, instruments employed, research procedures, and data analysis.

PARTICIPANTS

The participants were 148 doctoral students and 56 faculty members in the university. Among the student participants, 90.2 % were male, whereas only 9.8 % were female. About three fourth (77.6 %) of them were below 30 years old, 16.1 % were between 30~40 years old, and 6.3 % were over 40 years old. The wide age span might be explained by some participants' experiences in working. Over one third (41.1 %) of the participants had some working experiences, whereas 58.9 % of them had no working experiences. In regard to their field of study, 33.1 % of them were from the College of Computer Science, 31.7 % from the College of Electrical

Engineering, 22.3 % from the College of Engineering, 7.2 % from the College of Management, 4.3 % from the College of Biological Science and Technology, and 1.4 % from the College of Science.

Of the total 56 teacher participants, 83.6% were male, while only 16.4% were female. With respect to their academic rank, approximately 67.3% reported being full professors, 10.9% associate professors, and 21.8% assistant professors. Among them, 26.4% reported being from the College of Electrical Engineering, 22.6% from the College of Management, 18.9% from the College of Engineering, 15.1% from the College of Science, 11.3% from the College of Computer Science, and 5.7% from the College of Biological Science and Technology.

In the present study, teachers' viewpoints were also considered due to their dual roles as both advisors and researchers. As the advisors, they should have extensive contact with doctoral students, and would hence understand their language problems. As the researchers, they must know exactly what kind of English competence is required to function well in the academic community.

It should also be noted that current English courses for doctoral students are mainly provided by the language center in the university. The training of these courses exclusively focuses on academic English writing or technical writing. Among all the colleges, only the College of Computer Science has provided English courses for their own doctoral students since 2005. The courses they have provided include technical English writing skills, English listening and speaking skills, English reading and comprehension skills, and English oral presentation skills. In response to graduate students' English needs, since 2006 the office of academic affairs in the university will offer twelve academic English courses, including oral presentation (3 classes), basic writing (3 classes), thesis writing (3 classes), and technical writing (3 classes).

INSTRUMENT

In the present study, two self-designed questionnaires were adopted as the major equipment to elicit both students' and teachers' perception about the English needs in doctoral study. As mentioned in chapter one, "needs" in the present study refers to the product-oriented/target needs, which consist of necessities, lacks, and wants. Therefore, the following three issues were the primary concerns of the survey: (1) the role of English in doctoral study and the contexts requiring English use (necessities); (2) the evaluation of doctoral students' English proficiency (lacks); (3) the expectation of curriculum design and other help on English (wants).

Table 3.1

Corresponding Questions in Student and Teacher Questionnaire

Section	Students version	Teacher version
1. Demographic information	Question 14-17	Question 11-13
2. Importance of English	Question 2-5	Question 2-3
3. Contexts of English use	Question 1	Question 1
4. Evaluation of doctoral students' English ability	Question 6-8	Question 4-6
5. Expectations of curriculum design	Question 9-10	Question 7
6. Other help on English	Question 11-13	Question 8-10

Specifically, the two questionnaires consisted of the following six sections: (1) demographic information, (2) importance of English, (3) contexts of English use, (4) evaluation of doctoral students' English ability, (5) expectation of curriculum design, and (6) other help on English. The reliability of the students and teacher questionnaire was high, $\alpha = .94$ and $.92$ respectively. The content and structure of the two questionnaires were approximately parallel with each other, only that the same issues

were approached from different people's perspective, the teachers' versus the students'. Table 3.1 presents a detailed list for the corresponding questions in these two versions of questionnaires.

More detailed introduction of each section is as follows. First, the demographic information section aimed to sketch participants' personal background, such as, gender, field of study, working experiences, and so forth. Second, in the importance of English section, the participants were asked to estimate the importance of English to doctoral students and to verify the relative importance of the four language skills. Third, the contexts of English use section was used to elicit the frequency of students' English use in different contexts. Students' performance in these contexts and teachers' evaluation of the importance of these contexts were also concerned. Fourth, the evaluation of doctoral students' English ability section was intended to uncover students' self-evaluation and teachers' evaluation of doctoral students' English proficiency. The participants were also asked about the language skills which doctoral students want most to/should improve. Fifth, in the expectation of curriculum design section, the author examined students' satisfaction of current English courses, and gathered both students' and teachers' opinions about future curriculum design. Finally, in the other help on English section, the participants were asked about the help or resources needed for doctoral students' English learning. In addition, since the graduation requirement in English and lecturing content courses in English have been currently promoted to enhance students' English ability, the participants were also required to comment on these two issues.

It should be noted that the twenty-two items listed in the contexts of English use section were a combination of previous studies' findings about important English tasks (Ostler, 1980; Beatty & Chan, 1984; Seferoğlu, 2001; Orr & Yoshida, 2001; Orr, Smith & Watanabe, 2003) and the author's personal experience and perception about

possible English use in doctoral study.

The two versions of questionnaires contained both close-ended and open-ended questions in each section, so the participants were free to write down their opinions which were not listed in the questionnaire as items to choose from. In addition, since all the participants were nonnative speakers of English, to avoid possible misunderstanding or anxiety from reading English sentences, the two questionnaires were composed in Chinese, participants' first language. For a complete copy of the questionnaires, please see appendix A for the student version, and appendix B for the teacher version.

PROCEDURE

Before the survey was conducted, the student questionnaire had been administered to 20 doctoral students for a pilot test. The content and wording of the questionnaire were revised according to the results of the pilot study and students' responses or suggestions. Since the teacher questionnaire approximately paralleled the student version in both the content and structure, its revision was also based on the same pilot test.

The revised student questionnaire was then delivered to doctoral students in five academic English classes in the university. A total of 148 doctoral students participated in the study. Meanwhile, the teacher questionnaire was e-mailed to about 300 full-time teachers of Ph.D. programs in the university, except for those in English related departments or institutes and those who are not native speakers of Chinese. Returned surveys were collected during an 8-week period. Thirty-one of these e-mails were returned by the mail system as undeliverable, and 206 people did not respond. Among the 63 people who responded to the e-mail, 7 reported that they did not have doctoral students and hence were unable to answer the survey questions. That is, only

56 surveys were completed and returned, yielding a 21.4% response rate. Survey responses were then coded for statistical analysis and entered into a computer database.

Because the response rate of the teacher survey was fairly low, it should be emphasized that the results do not reflect the opinions of the entire faculty in the university. In addition, since research data collected in the present study were solely from the students and teachers in one university, the research findings may not apply to the entire doctoral students in Taiwan.

DATA ANALYSIS

As mentioned earlier, there were both close-ended and open-ended questions in the two questionnaires. The quantitative and qualitative data were processed separately. All the numerical responses from the survey were entered into computer files for analysis. The numerical data consisted of two types of questions: the five-point Likert scale rating, and the frequency. SPSS (Version 12) was used to produce descriptive statistics for the totals, means, and standard variation of the rating as well as the relative percentage of the frequency. Chi-square, *t*-test, and ANOVA analysis were also conducted in order to determine if the participants have particular preferences or different perceptions about doctoral students' English needs.

As for the qualitative data, the open-ended questions asked the participants to comment on the help needed for students' English learning, the graduation requirement in English, and the policy of lecturing content courses in English. Comments for each question were likewise entered into computer files, examined, and then categorized into proper groups for further analysis.

CHAPTER 4

RESULTS

In this chapter, the results of the teacher and student survey are integrated and presented according to the following five issues: importance of English, contexts of English use, evaluation of doctoral students' English ability, expectations of curriculum design, and other help on English.

IMPORTANCE OF ENGLISH

In this section, both the student and teacher participants were asked about the importance of English and four language skills to doctoral students' current academic endeavor. In addition, the students were further asked about the importance of English and the four language skills to their future career. The participants were required to rate the importance of each item according to a five-point Likert scale: 1 = *not at all important*, 2 = *not important*, 3 = *fair*, 4 = *important*, 5 = *very important*. The students' average ratings are presented in Table 4.1. For each item, the mean and standard deviation are displayed. The teachers' average ratings, with a comparison of the students' corresponding ratings, are shown in Table 4.3.

Table 4.1

Importance of English and Four Skills to Current Academic Endeavor and Future Career

Item	Current academic endeavor			Future career		
	N	M	SD	N	M	SD
Importance of English	146	4.57	0.43	146	4.51	0.62
Listening	144	4.07	0.90	143	4.42	0.74
Speaking	143	3.87	0.10	144	4.33	0.90
Reading	143	4.64	0.71	143	4.36	0.91
Writing	143	4.63	0.69	143	4.16	0.97

In terms of the students' responses, the results show that English was generally regarded to be important for both their current academic endeavor and future career. The average ratings for these two items were 4.57 and 4.51 respectively. Similarly, when the students were asked about the importance of the four language skills to their future career, they all had a mean score higher than 4.00. A one-way within-subjects ANOVA revealed that there were no significant differences among the four means ($F(1.832, 260.073) = 3.117, p > .05$). In other words, the four language skills were of equal importance to the students' future career. However, for the current academic endeavor, reading and writing skills (mean = 4.64 for reading, and 4.63 for writing) seemed to be rated as slightly more important than listening and speaking (mean = 4.07 for listening, and 3.87 for speaking). A one-way within-subjects ANOVA analysis indicated a significant difference among these four means ($F(2.302, 310.797) = 44.276, p < .05$), and post hoc within-subjects contrasts revealed that except for the comparison between reading and writing, all the paired comparisons among the four language skills were significant. That is, according to the four means, reading and writing were considered to be more important to students' current academic endeavor, which was followed in sequence by listening and speaking. The results are in accord with Kuo's (2001) findings that reading and writing were rated as more important than listening and speaking in doctoral study.

In addition, differences were also found in the importance of the four language skills to doctoral students' current academic endeavor and future career. As shown in Table 4.1, listening and speaking seemed to be regarded as more important to the future career than to the current academic endeavor. In contrast, reading and writing were rated as more important to the current academic endeavor than to the future career. A matched t test was performed to test this hypothesis statistically. Table 4.2

shows that the importance of all the four language skills to the two contexts was significantly different from each other ($p < .05$). That is, the students apparently regarded the reading and writing ability to be more important to their current academic endeavor than to their future career, whereas listening and speaking were regarded as more important to their future career than to their current academic endeavor.

Table 4.2

Significant Differences Tests of Four Language Skills in Current Study and Future Career

Comparison	<i>t</i>	<i>df</i>
Listening (C & F)	-4.964*	142
Speaking (C & F)	-6.015*	142
Reading (C & F)	4.374*	142
Writing (C & F)	5.651*	142

Note. C = current academic endeavor; F = future career

* $p < .05$



Table 4.3

Teachers' and Students' Perception of the Importance of English and Four Language Skills to Doctoral Study

Item	Doctoral students			Teachers		
	N	M	SD	N	M	SD
Importance of English	146	4.57	0.43	56	4.70	0.50
Listening	144	4.07	0.90	56	4.11	0.78
Speaking	143	3.87	0.10	56	4.02	0.84
Reading	143	4.64	0.71	56	4.89	0.37
Writing	143	4.63	0.69	56	4.80	0.40

As for the teachers' responses, on the whole, their perception was similar to that of the students. That is, English was generally important to doctoral study (mean = 4.7), and it seemed that reading and writing were considered to be more important than listening and speaking in doctoral study (mean = 4.89 for reading, and 4.80 for writing, while 4.11 for listening, and 4.02 for speaking). A one-way within-subjects ANOVA comparing the means of the four language skills showed significant differences among them ($F(1.418, 77.989) = 43.790, p < .05$). Pairwise comparisons demonstrated that this significance was due to the differences between listening and reading, listening and writing, speaking and reading, and speaking and writing. In contrast, the differences between listening and speaking, and reading and writing were not significant. The results support the above assumption that the teachers regarded reading and writing to be more important than listening and speaking in doctoral study.



CONTEXTS OF ENGLISH USE

In this section, the following three issues were concerned: students' frequency of English use in different contexts, students' self-evaluation of their performance in these contexts, and teachers' evaluation of the importance of these contexts. For the first issue, the students participants were asked to rate their frequency of English use in twenty-two contexts according to a five-point Likert scale, ranging from *always* (5 points) to *never* (1 point). The twenty-two contexts can be roughly categorized into four groups according to the language skill required in it. Table 4.4 presents the mean and standard deviation of students' English use in these contexts.

The results show that, among the twenty-two contexts, only *reading English research papers* had a mean score higher than 4.00. It was followed closely by *reading English textbooks*, *reading English websites*, *reading English operation*

manuals, and *writing English research papers* (all rated higher than 3.00). At the other end of the scale, four contexts had a mean lower than 2.00: *telephone conversation*, *English group discussion*, *chairing an English meeting*, and *writing English operation manuals*. As a whole, reading was regarded as the most often used skill (group mean = 3.39), while speaking was the least used one (group mean = 2.02).

Table 4.4

Frequency of English Use in Different Contexts

Context	N	M	SD	Group mean
Listening to English research presentation	145	2.59	0.78	
Listening to English lecture	146	2.42	0.68	2.44
Listening to English news	145	2.31	0.66	
Professional English conversation	145	2.41	0.87	
English presentation	145	2.19	0.95	
Daily conversation	146	2.18	0.76	
Asking questions in a conference	146	2.10	0.91	2.02
Answering questions in a conference	146	2.05	0.93	
Telephone conversation	146	1.97	0.74	
English group discussion	146	1.77	0.72	
Chairing an English meeting	145	1.46	0.69	
Reading English research papers	146	4.24	0.78	
Reading English textbooks	146	3.86	0.82	
Reading English websites	146	3.51	0.82	3.39
Reading English operation manuals	146	3.36	0.10	
Reading English professional letters	146	2.88	0.87	
Reading English news	145	2.48	0.76	
Writing English research papers	146	3.36	0.92	
Writing English research proposals	144	2.92	1.08	
Writing personal English letters	146	2.73	0.97	2.70
Writing professional English letters	145	2.49	1.01	
Writing English operation manuals	145	1.96	0.95	

Table 4.5

Teachers' Expectation and Students' Self-evaluation of Their Performance in Contexts

Contexts / Abilities	Faculty			Doctoral students		
	N	M	SD	N	M	SD
Listening to English research presentation	56	4.14*	0.90	138	2.65	0.86
Listening to English lecture	56	3.96*	0.89	139	2.66	0.83
Listening to English news	56	3.18	1.06	140	2.21	0.77
English presentation	56	4.48*	0.66	139	2.37	0.88
Answering questions in a conference	56	4.37*	0.70	141	2.18	0.83
Asking questions in a conference	56	4.36*	0.70	140	2.26	0.87
Professional English conversation	56	4.18*	0.72	140	2.49	0.80
Daily conversation	56	3.68	0.97	140	2.46	0.86
English group discussion	56	3.59	0.91	140	2.22	0.81
Telephone conversation	56	3.41	0.99	141	2.26	0.83
Chairing an English meeting	56	3.23	1.04	138	1.88	0.81
Reading English research papers	56	4.89*	0.31	141	3.39	0.74
Reading English textbooks	56	4.79*	0.53	141	3.27	0.79
Reading English websites	56	4.45*	0.81	141	3.16	0.78
Reading English operation manuals	55	4.38*	0.89	141	3.28	0.76
Reading English professional letters	56	4.23*	0.85	141	3.07	0.76
Reading English news	56	3.39	1.00	139	2.53	0.78
Writing English research papers	56	4.75*	0.51	141	2.94	0.83
Writing professional English letters	56	4.20*	0.72	140	2.66	0.90
Writing English research proposals	56	4.16*	0.83	139	2.86	0.84
Writing personal English letters	56	4.02*	0.82	141	2.79	0.87
Writing English operation manuals	55	3.18	1.00	138	2.53	0.92

Note. * Rated by more than 70% of the teacher participants as “important” or “very important”

For the second and third issue, the student participants were required to self-evaluate their performance in these contexts according to a five-point Likert scale from *excellent* (5 points) to *poor* (1 point). On the other hand, the teacher participants were asked to rate the importance of the twenty-two contexts to doctoral study. To be more specific, each context was viewed as an individual English skill, and the teachers were required to evaluate if doctoral students have to possess the very skill in

order to function well in their current academic endeavor. Likewise, the five-point Likert scale was used, ranging from *very necessary* (5 points) to *very unnecessary* (1 point). Table 4.5 provides the students' self-evaluation of their own performance in the twenty-two contexts and the teachers' evaluation of the importance of these contexts (abilities).

The results show that the teachers generally gave all the twenty-two English-use contexts fairly high marks. The average rating of each item was above 3.00. Further analysis reveals that except for *writing English operation manuals* (38.2%), *chairing an English meeting* (39.3%), and *listening to English news* (42.8%), all the listed items were rated by more than 50% of the teachers as "important" or "very important" to doctoral study. Among them, *telephone conversation* (50.0%), *reading English news* (50.0%), *English group discussion* (55.4%), and *daily conversation* (58.9%) were of moderate importance, given that they were rated by about half of the teachers as "important" or "very important." As for the rest of the fifteen items (with an asterisk in Table 4.5), they were all rated by more than 70% of the teachers as "important" or "very important" to doctoral students.

However, among the fifteen items which most of the teachers regarded as essential to doctoral study, only the five reading related contexts were rated slightly higher than 3.00 by the students. The rest of the ten items, that is, the listening, speaking, and writing related contexts, were all given rather low marks, resulting in means between 2.00 to 3.00. Put differently, the students seemed to have rather low confidence in their performance in these contexts, especially for those requiring listening, speaking, and writing skills.

EVALUATION OF DOCTORAL STUDENTS' ENGLISH ABILITY

In this section, the students were asked to self-evaluate their ability in English as a whole and in the four language skills respectively, and the teachers were required to evaluate their students' English proficiency in parallel. A five-point Likert scale was used, ranging from *excellent* (5 points) to *poor* (1 point). In addition, the students and teachers were respectively asked about the language skill(s) they wanted most to improve and they regarded as necessary for doctoral students to improve.

Table 4.6

Students'/Teachers' Perception of Ph.D. Students' English Competence


Ability	Doctoral students			Faculty		
	N	M	SD	N	M	SD
General English proficiency	144	2.65	0.74	53	2.55	0.57
Listening	144	2.32	0.99	53	2.47	0.70
Speaking	144	2.20	0.94	53	2.17	0.75
Reading	144	3.78	0.86	54	3.72	0.69
Writing	144	2.78	0.95	52	2.46	0.87

Table 4.6 shows that the teachers' perception and the students' self-perception about the English competence of doctoral students were rather similar. Parallel to the students' low confidence about their English ability, the teachers seemed likewise to be rather unsatisfied with doctoral students' English proficiency. Both groups on average gave fairly low marks to the overall English ability of doctoral students (mean = 2.65 by the students, and 2.55 by the teachers). As with the four language skills, only the reading skill was rated higher than 3.00 by both groups (mean = 3.78 by the students, and 3.72 by the teachers), whereas speaking was regarded as the weakest skill for doctoral students (mean = 2.20 by the students, and 2.17 by the teachers). The one-way within-subject ANOVA showed significant differences for both the students'

ratings of the four language skills ($F(2.806, 401.249) = 112.177, p < .05$), and the teachers' ratings of them ($F(2.555, 127.751) = 64.271, p < .05$). For the students' ratings, pairwise comparisons revealed that only the differences between listening and speaking were not significant. That is, according to the means in Table 4.6, listening and speaking were both regarded as the weakest skills, which were followed by writing and reading in sequence. As for the teachers' ratings, post hoc comparisons showed that the significant differences were due to the higher rating given to reading, and the differences between speaking and listening. In other words, reading was considered as the best mastered skill, and doctoral students' listening ability was perceived as better than their speaking ability. However, the differences between listening and writing, and speaking and writing were not significant.

Table 4.7

Skills Doctoral Students Wanted Most to/Should Improve



Ability	Doctoral students		Faculty	
	N	%	N	%
Listening	111	75.0 %	22	41.5%
Speaking	106	71.6 %	28	52.8%
Reading	25	26.1 %	15	28.3%
Writing	93	62.8 %	44	83.0%

As with skills to improve, the students and teachers seemed to have different opinions. As presented in Table 4.7, the listening and speaking skill were selected by the majority of the students (75.0% and 71.6% of the participants respectively), which is closely followed by the writing skill (62.8%). There were significant differences among the selected frequency of the four language skills ($\chi^2 = 57.012, df = 3, p < .05$). In contrast, most of the teachers considered writing (83.0%) to be the most necessary skill for doctoral students to improve. It was followed by speaking (52.8%)

and listening (41.5%) but with moderate importance, given that only about half of the teachers selected these two skills. The results also indicate significant differences among the four language skills ($\chi^2 = 16.835$, $df = 3$, $p < .05$). Taken as the least necessary skill to improve, the reading skill seemed to attract most agreement among the two groups of participants. Only 26.1% of the students and 28.3% of the teachers thought that doctoral students should improve the reading ability.

EXPECTATIONS OF CURRICULUM DESIGN

In this section, the author intended to elicit the information about students' satisfaction about current English courses, and the courses suggested to be offered in future. First, the student participants were asked to evaluate the quantity of current English courses, which were roughly divided into listening, speaking, reading, and writing related courses. The satisfaction degree was measured by a five-point Likert scale, ranging from *very sufficient* (5 points) to *very insufficient* (1 point).

Table 4.8

Satisfaction Degrees of Current English Courses

Course	N	M	SD
Listening	141	2.64	0.88
Speaking	141	2.63	0.87
Reading	141	2.98	0.91
Writing	141	2.99	0.96

As shown in Table 4.8, none of the four types of English courses were rated higher than 3.00. This suggests that the students generally perceived English courses offered by the university to be insufficient. In addition, the shortage problem seemed to be more serious in listening (mean = 2.64) and speaking courses (mean = 2.63) than

in reading (mean = 2.98) and writing courses (mean = 2.99). To test the hypothesis, a one-way within-subjects ANOVA was performed. The results show that there were significant differences among the four means ($F(1.763, 246.781) = 25.114, p < .05$). According to the post hoc comparisons, except for the comparison between listening and speaking, and reading and writing, all the paired comparisons were significant. In other words, the results confirmed the assumption that listening and speaking courses were considered as even more insufficient than reading and writing courses.

Table 4.9

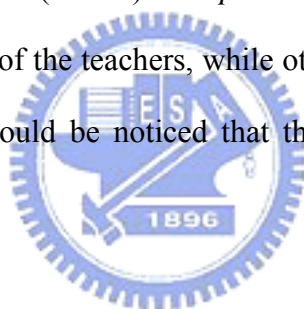
Suggested English Courses for Doctoral Students

English course	Doctoral students			Faculty		
	N	%	Rank	N	%	Rank
Writing for academic purposes	110	74.3%	1	50	89.3%	1
Listening for academic purposes	100	67.6%	2	17	30.4%	4
Q & A skills for academic purposes	89	60.1%	3	15	26.8%	5
Listening for general purposes	83	56.1%	4	15	26.8%	5
Conversation skills for general purposes	80	54.1%	5	20	35.7%	3
Meeting discussion skills	77	52.0%	6	10	17.9%	8
Negotiation skills	76	51.4%	7	8	14.3%	9
Public speaking/presentation	67	45.3%	8	37	66.1%	2
Reading for academic purposes	64	43.2%	9	14	25.0%	6
Writing for general purposes	63	42.6%	10	14	25.0%	6
Grammar	56	37.8%	11	11	19.6%	7
Resume writing	53	35.8%	12	4	7.1%	11
Autobiography writing	46	31.1%	13	5	8.9%	10
Letter writing for general purposes	41	27.7%	14	10	17.9%	8
Reading for general purposes	40	27.0%	15	4	7.1%	11
Letter writing for business purposes	27	18.2%	16	4	7.1%	11

Second, both the students and teachers were asked to select the English courses which they would suggest the university to offer to doctoral students. Table 4.9 presents the selected frequency, relative percentage, and frequency rank of the listed

courses on the questionnaire.

As shown in Table 4.9, *writing for academic purposes* was selected by most of the participants in both groups (74.3% of the students, and 89.3 % of the teachers). The greater attention to academic writing might be expected, given that academic publication is the primary requirement in doctoral study. It is important to point out, however, that among the top ten English courses selected by the students, seven of them were listening and speaking related courses—all of the top ten courses were selected by more than 40 % of the student participants. That is, besides the academic writing needs, listening and speaking related courses were also extensively in demand. In contrast, the teachers tended to focus on a relatively small number of courses. Only *writing for academic purposes* (89.3%) and *public speaking/presentation* (66.1%) were selected by the majority of the teachers, while other courses were all selected by less than 40% of them. It should be noticed that these two courses were both for research-oriented purposes.



OTHER HELP ON ENGLISH

In this section, questions were designed to elicit the participants' viewpoints toward the following three issues: other help needed for students' English learning, graduation requirement in English, and lecturing content courses in English.

Other Help Needed for Students' English Learning

In this part, both the students and teachers were asked about the help, other than English courses, they expected the university to provide to doctoral students. Since this was an open-ended question, the participants were allowed to be free to write down their suggestions.

For the students' comments, the suggestions can be roughly divided into the

following five categories:

1. Offering the service of paper proofreading and writing consultation (11 people):

All the demand for paper proofreading and writing consultation targeted at research paper writing. Some of the participants expected language teachers to help proofread the draft of their research reports, while some hoped that the teachers could provide them useful guidance in writing English papers.

2. Creating an effective language learning environment (7 people):

For some participants, the environment played an important role in learning English. They hoped that the university could create an environment in which English had a connection with their daily life on campus. In this way, they could have more opportunities to use and practice their English. For example:

(1) Create a good English learning environment, not just taking courses and exams.

(2) Provide a whole-English environment, courses, and websites.

(3) Create a whole-English environment where we can communicate with one another in English.

3. Providing more English courses and more financial support (7 people):

In this category, the quantity of the English courses and the charge of them were the two main concerns. Several students complained that English courses were so insufficient that it has always been difficult to register for wanted courses. In addition, they hoped that the university could offer more free courses or more financial support for English courses. One of them stressed that auditing should be allowed, in which way students could freely join part of a course according to their own needs.

(4) Provide more courses and meanwhile lift the ban on auditing—sometimes students merely want to attend part of a course which they are interested in.

Or maybe courses could be conducted as seminars which provide

speeches/presentations students could join freely.

4. Increasing the opportunities to interact with international students (6 people):

A number of the students also considered the communication and interaction with international students to be beneficial to their English learning. They hoped that the university could enroll more international students to increase their opportunity of English use. Moreover, it was suggested that the school could create proper environment, or regularly hold activities in which local and international students could interact and communicate with each other.

5. Providing more learning materials and resources (4 people):

Several students suggested that the school should provide more English learning resources, such as, free online English learning resources, English learning magazines, free learning materials, or other self-learning materials.

As for the teachers' suggestions, the majority of them were related to academic writing (10 people). Similar to the opinions of the students, research paper proofreading and one-to-one writing consultation were also mentioned by the teachers. One of them even suggested that there should be a writing center which helps students with the English grammar. In addition, since academic writing ability was deemed as critical for doctoral students, some teachers requested more English courses which provide training on writing skills as well as logical thinking strategies. Writing practice and feedback from language teachers were also regarded as helpful to doctoral students.

(5) A writing center providing help on the grammar of academic writing.

(6) Academic English writing courses. Technical writing is most important in this school for students' publication.

(7) Lots of writing assignments and lots of feedback from the lecture in writing

classes will greatly help.

Only three teachers mentioned about the help other than academic writing. These comments, similar to those of the students, were concerned about the language learning environment, opportunities to interact with international students, and the training on English presentation.

(8) An environment students can express their ideas or discuss with one another in English.

(9) The opportunities to interact and communicate with native English-speaking international students.

(10) Training on English presentation.

The Graduation Requirement in English

In this part, the author asked the student and teacher participants if the graduation requirement in English (such as, having a score higher than 200 on the TOEFL test, or taking extra English courses) could help to improve doctoral students' English ability. The participants were required to answer this question by a five-point Likert scale, ranging from *strongly agree* (5 points) to *strongly disagree* (1 point), and give reasons for their answers.

Table 4.10

The Effect of Graduation Requirement on English Learning

Item	Doctoral students			Faculty		
	N	M	SD	N	M	SD
Graduation requirement	144	3.47	1.10	56	3.64	.96

As shown in Table 4.10, though the mean score is only between 3.00 and 4.00, the results are generally positive. Most of the participants regarded that the language

requirement policy should have a positive effect on English learning. Further analysis reveals that there were 54.9% of the students and 67.9% of the faculty who “strongly agreed” or “agreed” that the language requirement should be helpful to doctoral students.

Opinions Supporting the Policy

As for the reasons for their answers, the student participants who held positive attitudes seemed mostly to regard the language requirement as a pressure, which could motivate themselves to polish their English (15 people). Many of them contended that progress occurred only when they were forced to learn English. It was the pressure or the goal that led them to make progress. One of the students even pointed out that tests worked better than merely taking courses since course instructors were always “too kind to their students.” Taking English courses could barely help improve their English ability.

(11) *The progress always comes from the pressure.*

(12) *It will force me to attain the goal, force me to learn English.*

(13) *Tests are more effective for me. Since school teachers are too kind, I did not make progress by taking courses. Besides, courses can not cover all the English abilities.*

There were still a small number of students who supported the language requirement due to the importance of basic English ability (5 people). The policy was believed to increase and ensure the basic English ability of doctoral students.

On the other hand, the teachers in favor of the language requirement held similar opinions with the students. The requirement was also regarded as a help which could urge students to work harder on English (2 people), and basic English ability was considered as important for doctoral students (2 people). However, it must be

further noted that although there were more teachers supporting this policy, comments from these teachers, compared with those of the opponents, were relatively quite few.

(14) It can push them to improve their English ability.

(15) I strongly agree, because it is a basic skill.

Among the teachers who held positive attitudes toward the policy, two of them stressed that setting a criterion on the TOEFL test should be more useful than taking extra English courses. It seemed that taking English courses was regarded as not very effective in improving students' English ability.

(16) Having a score more than 200 on the TOEFL test should be the only criterion. Do not use taking English courses to be the criterion.

(17) Requiring a score more than 200 on the TOEFL test can force students to learn correct English diligently, but taking extra English courses is completely useless.



Opinions against the Policy

In contrast, the students who held negative attitudes toward the policy provided the following two main reasons. First, it was argued that a high score on tests does not guarantee sufficient English proficiency (7 people). Performance in tests and actual application were regarded as two different things. Several students stressed that the accumulation of English ability required a long period of time, while passing the language requirement could be achieved by short-term intensive training. One who gains good grades on TOFEL may still fail to use proper English in their study or research. In addition, since learning motivation aroused by pressure could not last for a long period of time, learning behavior might disappear right after students pass the language requirement.

(18) Tests and practical applications are two different things. The school should

let students learn what they want to learn (it is the needs that arouses learning motivation, not the tests), provide learning resources, but not set the criterion.

(19) The test content is different from the actual applications of English.

(20) English ability requires long-term uses and practices while the graduation requirement can be achieved by short-term efforts.

(21) Tests can be prepared in a short period of time. If students are not interested in English, their ability will decrease right after they pass the test.

Second, there were still several participants remarking that the graduation requirement may not meet the needs of everyone (5 people). In view of the fact that doctoral students in different disciplines may have different needs in English, it seems unreasonable to apply the same language requirement to all the students. Moreover, since different students must have different English proficiency, a language requirement suitable for some students might meanwhile be unattainable or overwhelming for others.

(22) It is not necessary for everyone to meet the requirement so there is no need to make it a policy. People should take courses according to their needs.

(23) Not everyone is good at English.

Finally, there are some comments which can not form a category but still offer some valuable information for us. As mentioned above, the increase of English ability should take a long period of time. One of the students pointed out the problem that it was too late to start working on English when they were doctoral students. Language training should be carried out since the college education. In addition, it was concerned that the language requirement might distract their attention to the research or expertise. In comparison to the content knowledge or the academic contribution, it seemed that language training was regarded as of minor importance.

(24) English ability should have been cultivated since the undergraduate period.

It is a bit late to start making efforts as a doctoral student.

(25) It is still useless if you have good English ability but little research contribution.

(26) It might distract the attention to research, delaying the graduation.

As for the teachers, those who held negative attitudes toward the language requirement reported the following two main reasons. Firstly, they also doubted the effect of the graduation requirement on students' English performance (4 people). Since the language requirement merely focuses on general English ability, it is questionable if it could meet doctoral students' specific English needs. One of the teachers even questioned the efficacy of current English courses, given that his students did not make significant progress after taking the courses. In addition, if the language requirement could sustain long-term learning motivation was also regarded as problematic.



(27) Students are required to publish research papers, and English writing is very important. A score higher than 200 on the TOEFL test does not represent that a student is able to write research papers in English independently.

(28) My students who have finished your current English training for Ph.D. students still perform unsatisfactory poor capability in general English understanding and writing.

(29) English is a tool for communication and a pleasure of culture learning. What matters is the learning motivation. It has nothing to do with tests.

Secondly, some teachers were rather concerned about the extra loading the language requirement would bring to students' learning, and its impact on the graduation (5 people). Since doctoral students were already busy in taking content

courses and doing research, the teachers worried that further adding the language requirement might be too overwhelming for them. Furthermore, it seemed not proper if students fail to graduate merely because of their deficiency in English.

(30) Doctoral students are busy in preparing for the qualify exam and research publication. They are too busy to take English courses.

(31) The requirement could be used in the entrance exam. It is not proper if students cannot graduate merely because of the graduation requirement but not their deficiency in expertise. I agree that English is important, but students can still do research in our country. Besides, currently students are required to write their thesis in English.

Lecturing Content Courses in English

In this part, the teacher and student participants were asked if lecturing content courses in English could help improve the English ability of doctoral students. They were required to comment on this issue by firstly rating it according to a five-point Likert scale, ranging from *strongly agree* (5 points) to *strongly disagree* (1 point), and secondly giving their reasons.

As shown in Table 4.11, overall, both the student and teacher participants agreed that lecturing content courses in English should help improve doctoral students' English ability. However, the average rating was merely slightly above 3.00, with 3.55 by the students, and 3.27 by the teachers. Further analysis reveals that among the student participants, 62.5% "strongly agreed" or "agreed" that lecturing courses in English is helpful, while there were only 43.7% of the teacher participants who held positive attitudes toward it. There were still 34.5% of the teacher participants hedging on the question, and 21.8% of them who "strongly disagreed" or "disagreed."

Table 4.11

The Effect of English Lecturing on English Learning

Item	Doctoral students			Faculty		
	N	M	SD	N	M	SD
Lecturing in English	144	3.55	1.05	55	3.27	.93

According to the given reasons, a number of the student participants held positive attitudes because of the increased opportunity for them to practice English listening (15 people). In addition, some students alluded to the help with vocabulary and oral expression. English lecturing was regarded to provide an environment where students could learn not only the proper English usages in their disciplines but also how to think in English. The way content teachers use English could become a model for students to follow or imitate.

(32) Learning English in context not only improves the listening ability, but also helps us to learn English expressions from teachers.

(33) It helps to develop the ability to think in English.

(34) It helps to understand the English vocabulary or phrases in our discipline.

On the other hand, the students against the policy were mainly concerned that the English lecturing in content courses might hinder the acquiring of content knowledge, and decrease the learning motivation. The problem was believed to be caused by the following two reasons. Firstly, it is doubtful if NNS teachers' English oral ability is good enough to impart knowledge to students (10 people). Teachers' poor oral expression was regarded as a great obstacle to English lecturing. However, the students also noted that if the class was conducted by NS teachers or NNS teachers with qualified oral ability, English lecturing should be helpful for them.

(35) Teachers' oral ability is poor. Even their Chinese is not good, not to mention

English (English native-speaking teachers can lecture in English).

(36) Teachers' expression ability is not always good. Some of them even have poor pronunciation, which is a torture to both teachers and students (exception: teachers who just returned from abroad generally have good English ability).

(37) Whether teachers' English proficiency parallels the international standard is a big problem. I have seen that some teachers lectured very well in Chinese but in a complete mess in English (of course, some teachers' English is better than their Chinese)

Secondly, students' listening ability was another problem. For students with poor English listening ability, English lecturing could turn into a complete nightmare (9 people). Since the expertise knowledge is already rather profound and complicated, lecturing in English could make it even more difficult for students to comprehend.

(38) Courses have been already rather difficult, whereas more obstacles are caused by English. English ability should not be improved in this kind of contexts. It is a loss to students in that those with poor English ability but good expertise knowledge might not be able to catch on.

(39) Content courses should focus on comprehension. Lecturing in English makes it more difficult for students to acquire the knowledge. If teachers are not native speakers of English, English lecturing will barely contribute to the English competence of students

As for the opinions of the teachers, their worries were similar to those of the students. Both those supporting and against the English lecturing policy were concerned about teachers' oral expression (5 people), students' listening ability (4 people), and their impact on content knowledge learning. English lecturing was reckoned to decrease learning efficiency and efficacy. It was also believed that the

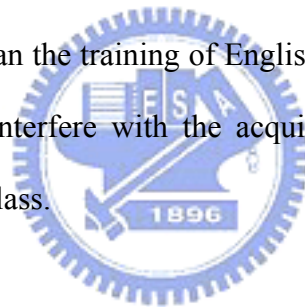
simple English used by NNS teachers would do little help to students' listening ability.

(40) It is helpful in management courses, but in science or engineering courses, it might be difficult for students to understand the lecture material.

(41) The oral ability of teachers should have a critical impact on students' learning. More contact with English must be helpful, but it usually decreases the learning efficiency.

(42) Given that Chinese teachers often use simple English, it brings little help to students' English ability, unless courses are conducted by English native-speaking teachers.

In sum, for the opponents, the aim of content courses should be the imparting of expertise knowledge rather than the training of English comprehension. If the training on English listening would interfere with the acquisition of content knowledge, it should be removed from the class.



CHAPTER 5

DISCUSSION & CONCLUSIONS

In this study, the author conducted a needs analysis to determine the English needs of doctoral students in a research-oriented university. Both students' and teachers' opinions were collected to better describe doctoral students' language needs. In this chapter, the findings of the present research were summarized. Pedagogical implications entailed from the research findings were also addressed. Finally, the limitations of the present study and the suggestions for future research were discussed.

SUMMARY OF FINDINGS

In this section, the research findings presented in Chapter 4 were summarized and further discussed according to the research questions of the present study.

How important is English to doctoral students? What is the relative importance of the four language skills for them?

Generally speaking, English was very important for doctoral students' current study and future career. As for the four language skills, both the students and teachers regarded reading and writing to be more important than listening and speaking in doctoral study. The results are in accord with those of Kuo (2001). Furthermore, the survey also shows that the students deemed listening to be more important than speaking in their current study. That is, among the four language skills, reading and writing were the most important skills, whereas speaking was the least important one for doctoral students. The phenomenon might be explained by the frequency of the use of the four language skills in doctoral study. Among them, reading and writing skills were more often used, and speaking was the least used one.

Moreover, the four language skills were also of different importance to

students' current study and future career. According to the students, reading and writing ability were more important to their current academic endeavor than to their future career. In contrast, listening and speaking ability were more necessary in the working context than in the academic context. The results seemed to imply that the doctoral study has a higher demand on English reading and writing, while students' future work may require much more aural and oral communication skills. The phenomenon can be further illustrated by the survey results that reading English research papers, textbooks, websites, and operational manuals as well as writing English research papers were the English-use contexts more often encountered by doctoral students. Meanwhile, Tsui's (1991) research also revealed that professionals in high-tech industries were in great demand for English listening and speaking ability. For these professionals, adequate oral communication ability was indispensable in their work.

However, the comparison between students' current needs and future needs is not without problems. As mentioned earlier, among all the student participants, only about 40% of them had working experiences before their doctoral study. More than half of the students might not have a clear picture about their future work yet. In addition, students' future work may vary from person to person, due to their different career plans. One who decides to further his/her current academic endeavor might have very different English needs from those of the one who prefers to enter the high-technology industry after graduation. It should be emphasized that this is one of the limitations of the present study, since students' future plan was not specified.

What are the contexts in which doctoral students use English? What are students' self-evaluation of their performance in these contexts and teachers' evaluation of the importance of the contexts?

In doctoral study, the top five contexts of English use were reading English

research papers, reading English textbooks, reading English websites, reading English operation manuals, and writing English research papers. Overall, reading was the most often used skill, which was followed by writing, listening, and speaking in sequence. The results could be expected, given that the students are currently pursuing the doctoral degree in an EFL learning context. In this kind of environment, doctoral students are required to read many English research papers, textbooks and to publish their own research findings in English. In contrast, the use of listening and speaking are restricted to the occasional conference presentations or professional communications.

According to the teachers, the following fifteen English-use contexts were of great importance to doctoral students: (1) listening to English research presentation, (2) listening to English lecture, (3) English presentation, (4) answering questions in a conference, (5) asking questions in a conference, (6) professional English conversation, (7) reading English research papers, (8) reading English textbooks, (9) reading English websites, (10) reading English operation manuals, (11) reading English professional letters, (12) writing English research papers, (13) writing professional English letters, (14) writing English research proposals, and (15) writing personal English letters. However, among them, only the skills required in the five reading related contexts were rated by the students as somewhat mastered by themselves. The students had rather low confidence about their performance in other listening, speaking, and writing related contexts. It seemed that the students' current English proficiency was far from satisfactory, and they may not be able to use proper English in most of these contexts, especially for those requiring listening, speaking, and writing skills.

How do teachers evaluate doctoral students' current English proficiency and how do students self-evaluate their own English proficiency? What are the skills

students want to improve most and what are the skills teachers expect students to improve?

Both the teachers and students gave rather low marks to the overall English proficiency of doctoral students. Though both groups of participants agreed that reading was the best mastered skill, they had different opinions about doctoral students' performance in the rest of the three language skills. For the students, their writing ability was slightly better than their listening and speaking. However, the teachers regarded students' writing ability to be as poor as the listening and speaking ability. In addition, while the teachers rated students' listening ability to be better than their speaking ability, for the students, their listening ability was as weak as their speaking ability. That is, in comparison to teachers' perception, the students seemed to have relatively more confidence in writing but less confidence in listening, though these two skills were both reported as unsatisfactory.

As far as the skills to improve, the teachers' and students' opinions also varied. In contrast to teachers' exclusive emphasis on writing, listening and speaking were selected by the majority of the students as the most wanted skills to improve, while writing was also selected by more than half of them. Here the teachers' selection seemed reasonable, in view of the fact that reading and writing were considered to be more important and more often used in doctoral study, and that the students were relatively proficient in reading. However, the students tended to view this question with a different perspective. Although they agreed with their teachers that writing is vital to their academic development, they must be more concerned about their weakness in listening and speaking, and the way the two skills might affect their current academic endeavor or future career. Though less used, listening and speaking skills should still be important to students. For example, to make English presentation, or to conduct professional English conversation were regarded as required language

skills in doctoral study.

Are current courses offered by the school satisfactory to doctoral students?

What courses are suggested to be offered to doctoral students?

The students on the whole perceived that the quantity of the provided courses was rather insufficient. And the shortage problem was more serious in listening and speaking courses than in reading and writing. The results may be explained by current English courses and doctoral students' reading ability. On the one hand, nearly all the English training offered to doctoral students is on academic writing. Therefore, in comparison to other three skills, writing has drawn much more attention, and hence become "less insufficient." On the other hand, because of students' better proficiency in reading, even though the skill was frequently used in doctoral study, it seems not very necessary for students to take reading courses.

As for the suggested courses, both the students and teachers regarded *writing for academic purposes* to be the most important course. In contrast to students' demand for various courses, the teachers exclusively focused on the following two English courses: *writing for academic purposes*, and *public speaking/presentation*. It seemed that the teachers held a relatively practical view of courses, since academic writing and public presentation are the basic requirement for academic development. More specifically, while the students expected the university to increase the quantity and variety of English courses, the teachers might have been aware of the limited time their students have, and hence focused on the two vital skills in doctoral study.

It is also worth noting that among the top ten courses selected by the students, seven of them belong to listening or speaking. The results respond to the findings that the skills the students wanted most to improve were listening and speaking, and that listening and speaking courses were perceived as more insufficient than reading and writing. Most important of all, the findings demonstrate that listening and speaking

were of a certain degree of importance to doctoral students, if not the most important.

What kind of help or resources other than English courses is expected to be provided to doctoral students? Do graduation requirement in English and lecturing content courses in English help improve their English ability?

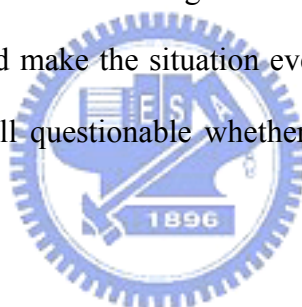
First of all, the help or resources suggested by the participants were summarized and listed as follows:

- Writing consultation and proofreading service for research reports
- An effective learning environment to increase English use
- More English courses and more grant support for the courses
- More opportunities to interact with international or native English-speaking students
- Free online resources or self-learning materials

Second, when asked about if the graduation requirement is helpful, more than half of the teachers and students held a positive attitude. The participants in favor of the policy regarded it as a necessary pressure which could help motivate doctoral students to work harder on English. In addition, it should help ensure that students have sufficient basic English ability. However, for the opponents, passing the language requirement did not represent that students have sufficient English ability. It is also problematic if the same standard is suitable for everyone, especially when students are from different disciplines and with different language needs. Moreover, the teachers were particularly worried about its influence on graduation and if students have time to work on the added requirement. It should also be noted that although the present study did not intend to verify which criterion should be adopted as the graduation requirement, both the students and teachers seemed to put relatively higher value on the standard test than on the English courses. One possible explanation might be that in comparison to taking courses, tests should bring students

stronger pressure, which could effectively and efficiently push them to work hard on English.

Finally, in respect to the English lecturing policy, there were also relatively more participants believing that it should be helpful. Nevertheless, in comparison to the students, the teachers seemed to hold a more conservative attitude toward the policy. For those supporting the policy, lecturing content courses in English could help students improve their listening ability. In addition, teaching English in contexts transforms teachers into language models, from whom students can learn useful vocabulary or expressions. However, the opponents were concerned that teachers' oral proficiency and students' poor listening ability would affect content knowledge learning. Given that the content knowledge is already difficult to comprehend, teachers' flawed English could make the situation even worse. Even if teachers have sufficient oral ability, it is still questionable whether students are well-prepared for English lecturing.



IMPLICATIONS

In line with previous studies on English needs of postgraduates (Orr & Yoshida 2001; Orr, Smith & Watanabe, 2003; Kuo, 2001), in the present study, English was generally considered as a very important tool for doctoral students. However, the four language skills seemed to play different roles in students' present study and future career. In contrast to the high demand of reading and writing in doctoral study (also see Kuo, 2001), listening and speaking ability are more important in the working context. The discrepancy might entail the problem that the English training students received in school may not meet the language needs of their future work. To be more specific, the academic reading or writing training in school does not prepare students to handle the oral communication requirement from their work. As indicated by Tsui

(1991), professionals in high-tech industries were in great demand for oral communication skills, but the training on them was usually found to fall short. In order to bridge the gap between current needs and future needs, it is suggested that in course planning, both kinds of needs should be taken into consideration. Furthermore, since learners may not know very well about their future language needs, as indicated by Beatty & Chan (1984), opinions from alumni (those who have been in the target working context) should be of even greater importance.

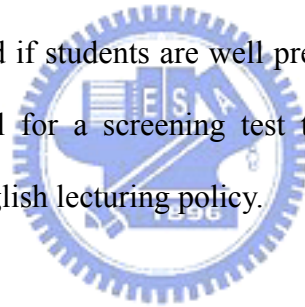
As mentioned earlier, among the four language skills, writing has often drawn the most attention of the postgraduates or academics (Kennedy, 2001; Wood, 2001). It is supposed to be the result of the needs to publish internationally, and to interact with other researchers around the world. However, in the present study, it was the listening and speaking ability that became the primary focus of the doctoral students. Being students' relatively weaker skills, listening and speaking were the language skills the students wanted most to improve. In addition, among the top ten wanted courses, seven were about listening and speaking. It seemed that current training on these two language skills was far from satisfactory. However, it should be noticed that the emphasis on listening and speaking does not necessarily decrease the importance of the writing ability. The help and training on academic writing was also in great demand. As a matter of fact, not only listening and speaking courses but also writing and reading courses were considered as rather insufficient. In respond to students' needs, it is suggested that the university should increase the overall quantity and variety of English courses, especially for the training on writing for both general and academic purposes, listening for both general and academic purposes, presentation and Q & A skills, general conversation skills, meeting discussion skills, negotiations skills, and reading for academic purposes.

It is important to emphasize, however, that students' perceptions of needs may

not always be in accord with those of their teachers. According to Hutchinson & Waters (1987), a discrepancy between objective (teachers' viewpoint) and subjective needs (students' viewpoint) might lead to a decrease in learning motivation, given that courses are usually planned according to the objective needs. In the present case, the students and teachers likewise held different opinions about what to emphasize in English learning. Though the students and teachers both recognized the poor English ability of doctoral students, students' strong motivation to improve the listening and speaking ability seemed obviously contrary to their teachers' exclusive emphasis on writing. The discrepancy between the teachers' and students' perception was also seen in the evaluation of doctoral students' proficiency in the four language skills. As suggested by Hutchinson and Waters (1987), there might be no straightforward way to find the best solution to balance the objective needs and the subjective needs. However, at least the course designers could collect related information and different viewpoints as many as possible, and try their best to make a proper decision.

As with the controversy over the graduation requirement, the positive and negative opinions actually did not conflict with each other. As commented by the participants, the graduation requirement in English could more or less help enhance doctoral students' basic English proficiency as well as motivate them to work harder on English. Though the progress on general English ability does not necessarily advance the academic English skills, it serves as the foundation for students' further English learning. As remarked by Orr (2001), it is quite necessary for learners to first acquire the general English ability before they receive the training on specific English skills. In other words, the basic English proficiency could help students to acquire more complicated, specific English usages. However, since the graduation requirement in English determines if students could graduate, what the language requirement should be deserves much more consideration and discussion.

Finally, from participants' worry about lecturing content courses in English, we can see how greatly teachers' oral proficiency and students' listening ability would influence the efficacy of the lecture. As noted by several participants, the primary function of content courses should be the delivering of content knowledge. Language learning should be processed under the prerequisite that it does not interfere with content learning. As a matter of fact, effective language learning occurs only when the input is comprehensible and correct. For example, a teacher with poor oral ability may not only fail to impart knowledge, but also bring little help to students' English proficiency if incorrect expressions are used. Therefore, although more exposure to English could benefit students' English ability, English lecturing may not be suitable for all the teachers or students. It depends on how well an instructor could conduct a content course in English, and if students are well prepared for it. It is recommended that the university could call for a screening test to determine if the teachers or students are ready for this English lecturing policy.



LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Since the present study aims to comprehensively investigate the English needs of doctoral students, to achieve the breadth, the expense might be the lack of the depth. For example, when the participants were asked about the four language skills' importance to their current study and future career, the present study did not further discuss the relationship between the given answers and the different disciplines/future plans of the participants. Students from a particular discipline or with a similar future plan might have parallel language needs or problems. To attain a more profound depth of understanding, one could narrow the research scope to a specific discipline, and gather more detailed information about the shared needs of a particular group. Similarly, to better understand the efficacy of current English courses, it would be

helpful to investigate how students evaluate the current English training provided by the university. It is of interest to know if students actually benefit from these courses. What are the reasons that make students value or devalue an English course?

It would also be interesting to know more about students' or teachers' attitude toward the graduation requirement in English. It should be admitted that in the present study, the definition of the graduation requirement was not clearly specified. It was temporarily assumed to be a proficiency test or a certain amount of required courses. However, the comments from the participants revealed that they seemed to have different preferences about what a graduation requirement should be. Of particular interest would be further research which examines the causes behind the preferences of students or teachers, and the language requirement which is regarded by the majority as most appropriate. Likewise, since teachers' oral ability were regarded as one of the reasons which affected the efficacy of English lecturing, it might also be of interest to further investigate content teachers' self-evaluation of their ability to lecture in English, and if they are willing to conduct their courses in English.

Finally, as indicated earlier, the participants surveyed in this study were selected exclusively from one research-oriented university in Taiwan. Thus, the results might not be representative of the whole doctoral student and teacher population. Therefore, further research with more participants in different universities is highly recommended. In addition, it is of interest to examine the same issue from language teachers' perspectives, and to compare the similarities or differences among the perceptions of students, content teachers, and language teachers. Since the current research mainly employed the survey techniques in data collection, further research adopting qualitative approach is also highly recommended. It is expected that qualitative research could provide more in-depth understanding of the language needs and learning difficulties of doctoral students.

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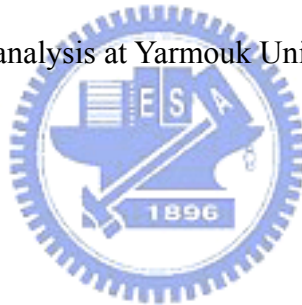
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APPENDIXES

APPENDIX A: STUDENT QUESTIONNAIRE

博士班學生之英語需求調查

【學生版】

1. 以下是您生活中使用英文的可能情境，請 (a) 勾選各項使用的頻率；(b) 自評您在各項的能力。

使用英文情境	(a) 使用的頻率					(b) 自評在該項目的能力				
	不會	很少	有時	常常	總是	很差	不佳	普通	不錯	很好
(1) 聆聽英文授課	<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) 聆聽英文研究報告	<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) 聆聽英文新聞報導	<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) 用英語作日常對話	<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) 電話中英語對話	<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) 用英語作小組討論	<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) 專業領域英語交談	<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) 以英語上台發表研究成果	<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) 學術場合以英語提問	<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"/>
(10) 學術場合以英語回答問題	<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"/>
(11) 主持英語會議／討論	<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"/>
(12) 閱讀英文研究報告	<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"/>
(13) 閱讀英文專業書籍	<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"/>
(14) 閱讀英文操作手冊	<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"/>
(15) 閱讀英文網站內容	<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"/>
(16) 閱讀英文專業書信	<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"/>
(17) 閱讀英文新聞報導	<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"/>
(18) 撰寫英文研究報告	<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"/>
(19) 撰寫英文研究計畫書	<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"/>
(20) 日常英文信件寫作	<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"/>
(21) 專業領域英文信件寫作	<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"/>
(22) 撰寫英文操作手冊	<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"/>
(23) 其他 ()	<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. 英文能力在您目前學術研究上的重要性如何呢？

- 非常不重要 不重要 無意見 重要 非常重要

3. 英文能力在您未來工作上的重要性如何呢？

- 非常不重要 不重要 無意見 重要 非常重要

4. 英文「聽、說、讀、寫」技巧在您目前學術研究上的重要性如何呢？

- 聽力： 非常不重要 不重要 普通 重要 非常重要
口說： 非常不重要 不重要 普通 重要 非常重要
閱讀： 非常不重要 不重要 普通 重要 非常重要
寫作： 非常不重要 不重要 普通 重要 非常重要

5. 英文「聽、說、讀、寫」技巧在您未來工作上的重要性如何呢？

- 聽力： 非常不重要 不重要 普通 重要 非常重要
口說： 非常不重要 不重要 普通 重要 非常重要
閱讀： 非常不重要 不重要 普通 重要 非常重要
寫作： 非常不重要 不重要 普通 重要 非常重要

6. 整體而言，您覺得自己的英文程度如何呢？

- 很差 不佳 普通 不錯 很好

7. 分別就「聽、說、讀、寫」技巧來說，您的英文程度又是如何呢？

- 聽力： 很差 不佳 普通 不錯 很好
口說： 很差 不佳 普通 不錯 很好
閱讀： 很差 不佳 普通 不錯 很好
寫作： 很差 不佳 普通 不錯 很好

8. 就英文能力而言，您目前最想加強的部分是？（可複選）

- 聽力 口說 閱讀 寫作

9. 您認為目前學校提供給博士生的英文課程是否足夠？

- (1) 聽力： 非常不足 不足 普通 足夠 非常足夠
(2) 口說： 非常不足 不足 普通 足夠 非常足夠
(3) 閱讀： 非常不足 不足 普通 足夠 非常足夠
(4) 寫作： 非常不足 不足 普通 足夠 非常足夠

10. 若學校將為博士生開設英文課程，您認為下列哪些是較為需要的？（可複選）

- _____ 英語會話課程 _____ 學術英文閱讀課程
_____ 英語簡報技巧課程 _____ 一般性英文閱讀課程

- | | |
|------------------------------------|-------------------------------------|
| <input type="checkbox"/> 英語問答技巧課程 | <input type="checkbox"/> 英文期刊論文寫作課程 |
| <input type="checkbox"/> 英語演講課程 | <input type="checkbox"/> 一般性英文寫作課程 |
| <input type="checkbox"/> 英語交涉技巧課程 | <input type="checkbox"/> 英文電子郵件寫作課程 |
| <input type="checkbox"/> 英語會議討論課程 | <input type="checkbox"/> 英文商用書信寫作課程 |
| <input type="checkbox"/> 學術英語聽力課程 | <input type="checkbox"/> 英文自傳寫作課程 |
| <input type="checkbox"/> 一般性英語聽力課程 | <input type="checkbox"/> 英文簡歷寫作課程 |
| <input type="checkbox"/> 一般性英文文法課程 | <input type="checkbox"/> 其他 _____ |

11. 除了課程之外，您還希望學校能提供哪些英文方面的協助？

12. 設定英語能力畢業門檻（如：畢業前須通過托福考試 200 分以上，或修習固定學分之英語課程…等。）

是否有助於提升您的英文能力？

- 非常不同意 不同意 無意見 同意 非常同意

原因是？ _____

13. 學校專業課程以英語授課，是否有助於增進您的英文能力？

- 非常不同意 不同意 無意見 同意 非常同意

原因是？ _____

14. 性別： 男 女

15. 系所： _____

16. 年齡： 25 以下 26~30 31~35 36~40 41~45 46 以上

17. 工作經驗： 無 有（ _____ 年）



APPENDIX B: TEACHER QUESTIONNAIRE

博士班學生之英語需求調查

【教師版】

1. 下列各項英文能力中，哪些是博士生應具備的？

英文能力	博士生是否應具備該項能力				
	很不需要	不需要	普通	需要	很需要
(1) 聆聽英文授課	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) 聆聽英文研究報告	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) 聆聽英文新聞報導	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) 用英語作日常對話	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) 電話中英語對話	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(6) 用英語作小組討論	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(7) 專業領域英語交談	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(8) 以英語上台發表研究成果	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(9) 學術場合以英語提問	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(10) 學術場合以英語回答問題	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(11) 主持英語會議／討論	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(12) 閱讀英文研究報告	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(13) 閱讀英文專業書籍	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(14) 閱讀英文操作手冊	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(15) 閱讀英文網站內容	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(16) 閱讀英文專業書信	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(17) 閱讀英文新聞報導	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(18) 撰寫英文研究報告	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(19) 撰寫英文研究計畫書	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(20) 日常英文信件寫作	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(21) 專業領域英文信件寫作	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(22) 撰寫英文操作手冊	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(23) 其他 ()	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. 英文能力在博士生學術研究上的重要性如何呢？

- 非常不重要 不重要 普通 重要 非常重要

3. 英文「聽、說、讀、寫」技巧在博士生學術研究上的重要性如何呢？

- 聽力： 非常不重要 不重要 普通 重要 非常重要
口說： 非常不重要 不重要 普通 重要 非常重要
閱讀： 非常不重要 不重要 普通 重要 非常重要
寫作： 非常不重要 不重要 普通 重要 非常重要

4. 整體而言，您覺得本校博士生的英文程度如何？

- 很差 不佳 普通 不錯 很好

5. 分別就「聽、說、讀、寫」來看，博士生的英文程度又是如何呢？

- 聽力： 很差 不佳 普通 不錯 很好
口說： 很差 不佳 普通 不錯 很好
閱讀： 很差 不佳 普通 不錯 很好
寫作： 很差 不佳 普通 不錯 很好

6. 就英文能力而言，您覺得博士生目前最需加強的部分是？（可複選）

- 聽力 口說 閱讀 寫作

7. 若學校將為博士生開設英文課程，您認為下列哪些是較為需要的？（可複選）

- | | |
|------------------------------------|-------------------------------------|
| <input type="checkbox"/> 英語會話課程 | <input type="checkbox"/> 學術英文閱讀課程 |
| <input type="checkbox"/> 英語簡報技巧課程 | <input type="checkbox"/> 一般性英文閱讀課程 |
| <input type="checkbox"/> 英語問答技巧課程 | <input type="checkbox"/> 英文期刊論文寫作課程 |
| <input type="checkbox"/> 英語演講課程 | <input type="checkbox"/> 一般性英文寫作課程 |
| <input type="checkbox"/> 英語交涉技巧課程 | <input type="checkbox"/> 英文電子郵件寫作課程 |
| <input type="checkbox"/> 英語會議討論課程 | <input type="checkbox"/> 英文商用書信寫作課程 |
| <input type="checkbox"/> 學術英語聽力課程 | <input type="checkbox"/> 英文自傳寫作課程 |
| <input type="checkbox"/> 一般性英語聽力課程 | <input type="checkbox"/> 英文簡歷寫作課程 |
| <input type="checkbox"/> 一般性英文文法課程 | <input type="checkbox"/> 其他 _____ |

8. 除了課程之外，您還希望學校能提供博士生哪些英文方面的協助？

9. 設定英語能力畢業門檻（如：畢業前須通過托福考試 200 分以上，或修習固定學分之英語課程…等。）是否有助於提升博士生的英文能力？

- 非常不同意 不同意 無意見 同意 非常同意

原因是？ _____

10. 學校專業課程以英語授課，是否有助於增進博士生的英文能力？

非常不同意 不同意 無意見 同意 非常同意

原因是？_____

11. 性別： 男 女

12. 系所：_____

13. 職稱： 教授 副教授 助理教授 講師 其他 _____



