

# **Innovation of English for Specific Purposes (ESP) Curricula in Taiwanese Universities**

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## **Statement of Originality**

The thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository\*\*, subject to the provisions of the Copyright Act 1968.

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Su Ching Christine Juan

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## **Abstract**

As part of the Taiwanese government's push for greater English language proficiency, significant funding has been directed to enhancing English for Specific Purposes (ESP) education in Taiwan (Ministry of Education, 2014c). In order to enhance graduate preparedness for the workplace, the Ministry of Education (2014c) has increased the number and diversity of ESP courses and directed attention to improving teaching quality and learner motivation within these courses. Yet, despite the concerted attention and government funding directed toward enhancing Taiwanese ESP learner outcomes, proficiency levels remain disappointing. This research focuses on two specific forms of ESP education – business English and engineering English – the most popular ESP specializations in Taiwan. Existing studies into these ESP areas have neither included the stakeholders from both pedagogical and industrial settings in a same project, nor compared the language needs of users at a range of stages. To address this gap in existing research, my study interviewed ESP students in their first and fourth year of university in order to document their English language learning experiences. Further, business and engineering employees were interviewed in order to produce a detailed taxonomy of English language use in the business and engineering workplaces. This allows for the identification of gaps in current ESP practice and an evaluation of the degree to which student participants feel prepared for the specificities of the workplace language environment. Recommendations for enhancing current ESP learner outcomes were extrapolated from the data.

## Chapter One

### Introduction to the Research

English as a foreign language is of central importance to all levels of Taiwanese schools and universities. The reality is that mandarin Chinese and the Taiwanese dialect, Tai-Yu, are the main local languages in Taiwan, and English is rarely spoken in daily life for the vast majority of Taiwanese residents (Jian, 2005). However, the pursuit of English proficiency is linked to wider policies of national development and economic expansion thus ensuring its prominence in educational policy. Far more than an academic issue, education in English, the global *lingua franca*, is central to a nation's prospects in the current international environment.

English language proficiency is not only a priority for the Taiwanese government; it is also a key expectation of Taiwanese employers. Globalization has influenced the workforce and international recruitment has brought new needs. Communicative competence in English has become an important requirement for employees to engage with international supervisors, colleagues and clients (Gimenez, 2000; Kaewpet, 2009; Meredith, 2012). As will be explored later, scholars have defined communicative competence in varying ways (Canale & Swain, 1980; Hymes, 1972, 1966; Johnson, 1982; Savignon, 1997; Widdowson, 1972). However, a common theme across the various models of communicative competence is the notion that 'linguistic competence does not adequately account for how language is used or the forms that occur in actual use' (Ingram, 1985; p.226). In other words, communicative competence refers to 'functional language proficiency, the expression, interpretation, and negotiation of

meaning involving interaction between two or more persons' (Savignon, 1997; p.272). In this view, true communicative competence involves socio-cultural proficiency as well as grammatical, strategic, and discourse competence (Canale & Swain, 1980).

Government organizations and companies of various industries have, over time, established systems for assessing English proficiency as part of the process for recruiting and promoting employees. For example, the Taiwanese Ministry of Examination (2012) states that English proficiency represents 20% of the criteria for gaining a promotion within government organizations. For teenagers, English proficiency certificates may assist in the procurement of extra credit for entering high schools. Furthermore, English language proficiency certification is an advantage for entry into tertiary studies across one hundred and forty five Taiwanese universities in two thousand five hundred and three departments (College Admissions Committee, 2014).

Government efforts to assist Taiwanese students to attain greater linguistic proficiency have been influenced by recent global developments in the teaching of English as a Second and Foreign language (ESL/EFL). Ministry of Education (2009, 2011b) policy has stressed the importance of oral practice and communication as key to achieving greater language proficiency, providing English radio programs during morning break time at schools and encouraging emphasis on listening and speaking skills as key to building up communicative competence. Such competence is seen as an essential requirement for high level functioning in diverse cultural and linguistic environments (Ministry of Education, 2011b). The English Curriculum Outline instituted by the

Ministry of Education (2009) for third to sixth grade students emphasizes competence for daily communication and advocates the integration of the four macro-skills in foreign language teaching and learning with the optimal goal: developing a global perspective in language acquisition alongside the enhancement of communicative competence within a multi-cultural environment. The Ministry of Education (MOE) has specified that a lack of communicative practice is the main problem with traditional language teaching approaches and that English education should seek to increase opportunities for communicative practice both in class and after hours (Ministry of Education, 2011b).

Prior to 2001, the government only sponsored English education for high school and university students (Taiwan Elementary and Secondary Educator Community, 2001). English language education was implemented for fifth and sixth graders in 2001 and was extended to include third and fourth graders in 2005, which means Taiwanese children now commence formal English language education at around nine years of age (Taiwan Elementary and Secondary Educator Community, 2001). In seeking to improve English proficiency in Taiwanese elementary and high schools, the Ministry of Education (2009) has attempted to cultivate expert language teachers, enrich teaching facilities, and balance the teaching and learning resources between metropolitan and regional areas. The Ministry of Education (MOE) has also instituted a range of measures to address gaps in speaking and listening proficiency between urban and regional high school students, including the introduction of computer-assisted teaching, targeted education for indigenous students, teaching workshops, and alternative assessment such as stage plays and varied homework assignments (Ministry

of Education, 2014c).

Likewise, significant government expenditure has been channeled into tertiary English language education, with the government instituting the 'Excellence in Universities' initiative in 2007, investing fifty billion NT dollars (1.6 billion US dollars) (Ministry of Education, 2008). Technology has been implemented to enhance communicative approaches to EFL education at the tertiary level, with the introduction of multimedia language labs (Chen, 2009; College English, 2009; Huang & Liu, 2000; ISESP, 2009) and the incorporation of international conference calls to enable live time, cross-cultural communication in the classroom (College English, 2009). These measures were instituted as part of the broader emphasis on moving beyond the traditional focus on reading and writing in tertiary English education, to encompass communicative listening and speaking skills (Ministry of Education, 2014d). A key element of the government's efforts to improve English language proficiency at all levels of education is the view that language teaching should be engaging and provide ample opportunities for students to communicate within an interactive, communicative environment (Ministry of Education, 2009).

Taiwanese university language instruction not only favors Communicative Language Teaching (CLT) - at least in policy if not in practice - there is also an emphasis on English for Specific Purposes (ESP) courses as preparation for professional English language use. Indeed, English for Specific Purposes (ESP) courses form an important component of English language education at Taiwanese tertiary institutions. ESP education is a branch of ESL/EFL education that seeks to prepare students for the use of the target

language in professional contexts. As will be shown later in this chapter, ESP originates in CLT, sharing an emphasis on communication and mutual intelligibility, but sharply narrowing the purposes of teaching and learning to focus on a more specific target domain (Dudley-Evans & John, 1998; Long, 2005). Becoming more prevalent in the 2010s (Baghcheghi, Koohestani, & Rezaei, 2011; Kaewpet, 2009; Spence & Liu, 2013), ESP education is organized around the English language skills or strategies required for specific professional contexts, such as English for nursing or English for engineering purposes.

As part of the government's push for greater English language proficiency, significant funding has been directed to enhancing ESP education in Taiwan (Ministry of Education, 2014c). In order to enhance graduate preparedness for the workplace, the Ministry of Education (2014c) has increased the number and diversity of ESP courses and directed attention to improving teaching quality and learner motivation within these courses. As will be shown later in this chapter, Business English (BE) and Engineering English (EE) are the two most popular forms of ESP in Taiwan.

However, despite the concerted attention and government funding directed toward enhancing Taiwanese EFL learner outcomes, proficiency levels remain disappointing. EFL education in Taiwan occurs within a unique socio-cultural context. In contrast to nations with a history of colonization by English speaking countries, Taiwan has a unique relationship with the English language (Walters, 1998). Rather than using English for everyday purposes – as may occur in former English colonies such as Hong Kong, South Africa, and the Philippines – English remains a foreign language in Taiwan,

rarely used in daily life. Hence, EFL learners in Taiwanese universities encounter specific difficulties not faced by learners who use English frequently outside the classroom.

Indeed, Taiwanese EFL students' underperformance is well documented in the literature (Yang, 2006; Chen, 2012; Li & Haggard, 2011) with scholars, such as Yiu (2003, p.2) arguing 'The English ability of Taiwan's university students is not good enough and they should be forced to study the language throughout their four years at college'. Also, Li and Haggard (2011) suggest that English proficiency of technical college students in Taiwan has worsened over the years. In comparison with Korea, Singapore, the Philippines, and Hong Kong, Taiwan has consistently received much lower scores in international proficiency tests such as the Test of English as a Foreign Language (TOEFL). In 2010 and 2013, the mean scores of Taiwanese students rose slightly from seventy six to seventy nine, whilst the mean score for Singaporean students remained at 98 (TOEFL, 2010, 2013). Taiwanese performance on the Test of English for International Communication (TOEIC) has also been disappointing (TOEIC, 2012, 2014). In 2010 and 2013, the mean scores of Taiwanese students rose from 544 to 569, whilst the mean scores for South Korean students rose from 626 to 632 and the mean scores of Chinese students rose from 623 to 716 (TOEFL, 2010, 2013).

There is an urgent need to better understand the factors that have impeded improvement of Taiwanese graduates' English skills despite concerted government efforts to enhance student outcomes and address communicative competence in the classroom. ESP, as an important component of EFL education at Taiwanese tertiary institutions, must necessarily form the focus of systematic, in-depth study in order to

better advance professional knowledge in this area. The suitability of language teaching methodology employed in university ESP courses and the degree to which ESP courses are thought to adequately prepare students for the complexities of authentic language use in the professional context, are important aspects to investigate in order to better understand the current situation of underperformance that characterizes ESP graduates in Taiwan.

As will be shown in chapter two, minimal research currently exists regarding Taiwanese incorporation of CLT in order to improve communicative competence, both in general EFL and specifically in ESP courses. There are several key studies in which Taiwanese educators have presented their own application of CLT in teaching (see Chien, 2014; Yeh, 2013). Notably, within the existing studies on CLT in Taiwan, references to seminal work from foreign scholars such as Richards (2001), Brumfit and Johnson (1979), Candlin (1976), Halliday (1970) and Widdowson (1978) abound with little to no citation of Taiwanese attention to communicative competence. This phenomenon indicates that whilst communicative competence has received increased attention in Taiwanese government policy and in 'best practice' guidelines for educators in the 2010s, there is an absence of evidence regarding its actual incorporation in classroom teaching. This would suggest that either there is limited attention to CLT approaches in educational practice despite its prevalence in policy, or that there is an urgent need for systematic investigation into the incorporation of CLT into classroom practices.

Accordingly, my study examines communicative competence within English for Specific Purposes (ESP) education at Taiwanese universities. I focus on two specific forms of ESP

– Business English (BE) and Engineering English (EE) – as these specialisations are the most popular in terms of enrolments (Ministry of Education, 2013b). Importantly, my research seeks to obtain rich feedback from students, graduates, and professionals regarding their ESP learning experiences in Taiwan.

### **1.1 Research Questions**

This thesis seeks to explore the main question:

**To what extent do Taiwanese ESP students and graduates feel prepared for the communicative competence requirements of the engineering and business professions?**

In order to address this central research question, the following sub-questions will be explored:

- a. According to students, what content and methodological approaches characterize ESP education in Taiwan?
- b. What are the main communicative competence requirements for the use of English in the engineering and business professions in Taiwan?
- c. According to students and graduates, how closely aligned are ESP curricula with the specific English language needs of Taiwanese engineers and business people and what recommendations might be made to increase graduate preparedness?

In order to explore these questions, I will examine the current ESP curricula and methodology in BE and EE courses in Taiwan, investigating syllabi, course materials and

interviewing students to determine their experience of typical methodology employed. In order to investigate the English language communicative competence requirements for the business and engineering workplaces in Taiwan, I will interview employees who are working in these professions. This will allow me to develop a taxonomy of language requirements for the engineering and business workplaces. I will then compare the typical language requirements of the workforce with the skills and knowledge identified by learners and graduates as central foci of ESP courses.

Given the emphasis on 'real world' contexts that is the foundation of ESP, I will incorporate the voices of various stakeholders in the workforce along with learners in the university. I argue that the systematic and holistic development of a detailed taxonomy of English language use in the business and engineering contexts must be produced in consultation with language users from these workplaces. As will be shown in chapter two, prior to this research, no such taxonomy existed. This was a significant gap in existing literature, as student feedback on their ESP learning experiences needs to be considered in terms of the language use in the workplace they intend to enter. This allows for identification of gaps in current ESP practice and evaluation of the degree to which students are prepared for the specificities of the workplace language environment. This incorporation of industry alongside academia renders my study a deeply original contribution to the Taiwanese field.

Finally, I will consider the data provided by students and employees at various stages of their career in order to extrapolate broad themes and common experiences regarding the provision of ESP education in Taiwan. In seeking to discover whether graduates

perceive their communicative competence to be adequate for the workplace demands in engineering and business contexts, my research seeks to allow for the identification of any areas in which current ESP education is succeeding and/or failing. Suggested actions to rectify any areas requiring improvement will also be extrapolated from the data.

The research seeks to examine student and employees' *perceptions* of their English language ability and learning needs. Richterich (1984, p.29) has explained that language needs depend on the individual speaker's perceptions of self: 'a need does not exist independent of a person. It is people who build their images of their needs on the basis of data relating to themselves and their environment'. Drawing on Richterich's (1984) work, my research will systematically examine ESP student and graduate perceptions regarding their English language needs and the degree to which ESP courses met these requirements.

## **1.2 Global Trends in English Language Education**

As mentioned earlier, the Taiwanese government's initiatives to improve learner outcomes emphasize the importance of communicative competence and CLT. Communicative Language Teaching (CLT) has been a leading approach in EFL for more than four decades (Dudley-Evans & John, 1998; Nunan, 2004; Richards, 2001). Emerging from the Natural Approach (Krashen & Terrell, 1983), CLT methodology was a reaction to the traditional Grammar Translation (GT) approach (Littlewood, 1981). However, whilst the Taiwanese Ministry of Education advocates the adoption of more interactive and communicative approaches to English language education, existing

research suggests the majority of Taiwanese English teachers at junior high schools (Chang & Su, 2010) and universities (Liou, 2004; Chern, 2010) continue to rely on traditional grammar-translation methods. In chapter two, I will discuss key themes from existing research regarding Taiwanese teacher perceptions of CLT.

Littlewood (1981) states that CLT approaches focus on meaning rather than solely addressing linguistic form or the pursuit of 'native-speaker-like' pronunciation. Importance is given to communicative competence and mutual intelligibility with emphasis placed on intrinsically motivating communicative tasks and authentic language use (Littlewood, 1981; Finocchiaro & Brumfit, 1983; Richards & Rodgers, 2001). Proponents of CLT argue that this approach is thus suited to the current day reality of English as the global *lingua franca*, where second language speakers of English outnumber first language speakers, there is a proliferation of English dialects, and communication frequently takes place between those who are second language speakers (Evans, 2013; Friedman, 2006). Advocates of CLT approaches reason that if English language education fails to stress communicative function and instead emphasizes the memorization of grammatical structures or decontextualized vocabulary, learner motivation and outcomes will be negatively impacted (Chern, 2010; Liou, 2004; TOEFL, 2010, 2013).

Overwhelmingly, communicative practice is upheld as key to Taiwanese language education (Chern, 2010; Chien, 2014; College English, 2009; Huang & Liu, 2000; ISESP, 2009; Liou, 2004; Ministry of Education, 2009, 2011b; Yeh, 2013). As will be shown in chapter two, educators and researchers in ESP also advocate communicative

competence as pivotal to professional language proficiency (Hutchinson & Waters, 1987; Long, 2005). This emphasis on communicative competence is found in both engineering English (Kaewpet, 2009; Kassim & Ali, 2010; Male, Bush, & Chapman, 2009) and business English research (Gibson, 2011; Gimenez, 2006; Zhang, 2007) – the two specific areas of ESP that form the focus of this study.

Yet, despite government emphasis on communicative competence, large-scale research by Chern (2010) and Liou (2004) has revealed that CLT is not a major focus in tertiary level English language education in Taiwan. Liou's (2004) research suggests that English education in most Taiwanese universities features little attention to fostering communicative competence, although further research is needed to explore the reasons for this lack of attention to communicative competence. Likewise, Chern's (2010) research, in which she interviewed course coordinators from twelve Taiwanese universities, indicated that little communicative language practice is provided in tertiary contexts with listening, speaking and writing skills rarely addressed. Chern (2010) also reviewed the websites of 60 universities and found that 32 out of 60 institutions provided only one year of English study, including two semesters and 18 weeks for each semester. Further, 20 out of 60 universities offered 2 years of English study, 5 out of 60 provided 3 years of English study, and only 2 universities provided 4 years of English study (Chern, 2010).

As discussed earlier in this chapter, the Ministry of Education (2014) has encouraged high schools to focus on improving students' speaking and listening skills. I argue that there is a need to interview high school leavers in order to better understand university

entrants' previous language learning experiences. Likewise, I suggest that there is also a need to understand university students' perceptions of language learning by interviewing fourth year students and asking them to reflect on their tertiary EFL education. As such, my research incorporates in-depth interviews with first year and senior tertiary students as well as graduates in order to gain rich feedback regarding perceptions of English language learning in Taiwanese ESP classes across a range of stages.

### **1.3 English for Specific Purposes (ESP) in Taiwan**

Greater emphasis on communicative competence from the 1970s onwards led to increased focus on the necessity of ensuring language instruction adequately prepares learners for the social contexts in which they will use English. English for Specific Purposes (ESP) originates in CLT and its concern for communication and mutual intelligibility (Dudley-Evans & John, 1998; Long, 2005). The development of the Functional-Notional approach to language instruction was also integral to the advent of ESP.

Emerging from the move toward more communicative approaches to language instruction, the Functional-Notional approach of the 1970s and 1980s organizes learning around the functions of language – such as requesting, offering, and apologizing – and the notions of language – such as location, time, and quantity (Johnson, 1982; Littlewood, 1981; Wilkins, 1976). These target functions or notions are applied to syllabus design for many ESP courses and students practice samples of

dialogue in order to acquire the related language (Richards & Rodgers, 2001).

As stated earlier, ESP became more prevalent in Taiwan in the 2010s (Baghcheghi et al., 2011; Kaewpet, 2009; Spence & Liu, 2013), with courses organized around the English language skills or strategies required for specific professional contexts. Whilst ESP courses are offered in both private and public universities, greater diversity in ESP offerings is available in private institutions. Some background knowledge of the Taiwanese tertiary sector is required in order to understand the differences in ESP courses between the public and private universities.

With increasing emphasis on tertiary qualifications as a means of securing employment in a highly competitive job market, the demand for university entry in Taiwan is at an all-time high. With a population of approximately 23 million people, there are one hundred and forty five universities in Taiwan (College Admissions Committee, 2014), greatly exceeding the thirty-nine universities in Australia; a country with a comparable sized population. It is clear that Taiwanese people place great significance on academic qualifications. In terms of the university system, national Taiwanese universities receive more government support than their private counterparts and are therefore the preferred choice for high school leavers.

Business English (BE) courses have the greatest number of unit offerings of all ESP courses at Taiwanese universities. Most Taiwanese universities provide business English courses, including the universities encompassing colleges of management and those encompassing colleges of engineering. According to the literature review to follow in

chapter two, BE courses are usually provided for pre-service learners (Chew, 2005) or in-service employees who are at the very early stages of their career (Dudley-Evans & John, 1998; Dudley-Evans & Green, 2007). In-service language learning refers to language courses that are usually provided by employers to help their employees learn English. In contrast to in-service language learning, pre-service language learning is provided for those not yet working at an institution.

There are two main areas of BE; English for General Business Purposes (EGBP) and English for Specific Business Purposes (ESBP). EGBP is designed to address fundamental English usage, featuring general listening, speaking, grammar and vocabulary learning (Hollett, 2006). The functions emphasized in EGBP courses include establishing contacts, arranging meetings, making introductions, and marketing (Sweeney, 2000). ESBP learners in Taiwan are usually business majors or those who have been working in the international business industry. Therefore, the focus of ESBP moves beyond fundamental vocabulary or language functions to encompass content related to seeking and securing professional positions and promotions (Dudley-Evans & John, 1998).

The variety of BE courses offered by Taiwanese universities has rapidly expanded since the early 2000s. Courses that may be studied in relation to BE include English for International Trading or Business Conversation, Business Oral Communication, Marketing English, English Translation for Economic and Trade, and English Meetings, Incentives, Conferences and Exhibitions (MICE) in Industry. Taiwanese BE textbooks have traditionally been imported from publishers in western countries, such as Oxford

University Press (Barnard & Cady, 2009).

Engineering English (EE) is also a key focus in both private and national university ESP offerings, with EE courses including English for Hi-Tech Industries, English for Information Technology and English for General Engineering (Tsou & Chen, 2013 in Tsou & Kao, 2013). The two specific forms of ESP that have been chosen as the focus for this research – EE and BE – are the most popular ESP specializations in Taiwan. The engineering and business departments are two of the largest faculties in Taiwanese universities and were estimated to have accounted for 60% of majors in 2012 (Ministry of Education, 2012). Between 2004 and 2013, more than 40% of Taiwanese university students were engineering majors and more than 37% were business majors (Ministry of Education, 2013). During these ten years, the annual number of engineering majors was more than four hundred thousand and the annual number of business majors was more than three hundred and thirty thousand (Ministry of Education, 2013; 2014). The popularity of these degrees reflects the important role of the engineering industry and the international business sector in Taiwan's economic expansion.

As will be shown in chapter two, there is a need for more research into ESP education in Taiwan. One important contribution is by Kao and Ko (2013) who applied genre analysis and Task-Based Instruction to design tertiary courses focused on English for Information Technology. Kao and Ko (2013) based their course design on Swales' (1990) genre analysis framework, with an emphasis on examining textual organization, exploration of linguistic features, and the pursuit of meaningful communication. According to Kao and Ko (2013), successful ESP education requires constant revision of

teaching methods and materials, and long-term collaboration between language teachers and specialist teachers from the professional field, such as business, healthcare, engineering, etc.

In addition, Chien (2014) conducted small-scale research on the implementation of an experimental syllabus at the tertiary level in Taiwan. Communicative Language Teaching (CLT), cooperative learning methods, and traditional grammar-translation instruction were interwoven in the design of an EFL course syllabus. The assessment of learning outcomes and experiences involved questionnaires, student interviews, teacher interviews, and classroom observations. The results showed that this method had a significantly positive impact on student learning. Chien's (2014) research also revealed that the English learners were aware of the importance of CLT to encouraging greater communicative proficiency.

Other notable existing research includes work by Tsou and Chen (2013), who interviewed 30 professors from different disciplines, including engineering and science departments, and 1,000 second year students from various disciplines in a Taiwanese university. The findings indicated that students perceived speaking skills to be the aspect of their language most in need of improvement (Tsou & Chen, 2013). The professor participants from science and engineering departments also considered speaking skills to be important and they suggested that ESP education should contain 70% of language skills and 30% of the specific content knowledge from the science and engineering disciplines (Tsou & Chen, 2013). However, this research did not incorporate exploration of student views regarding how to achieve greater speaking proficiency.

Moreover, without investigating the use of English in the workforce, graduate and employee feedback regarding the strengths and weaknesses of ESP education as preparation for employment is minimized. I argue that feedback from those who currently use English in the engineering and business workforce is essential to gaining a full understanding of the current state of ESP in Taiwan and the preparedness of students.

Indeed, a major rationale for my research approach is that currently there is little research in the field of Taiwanese ESP education that incorporates the views of current engineers and business employees. As such, an important source of information regarding the degree to which ESP courses prepare graduates has been omitted in much of the existing research. A notable exception is work by Tsui (1992), one of the pioneers of Needs Analysis (NA) in Taiwan, who conducted research in the workplace.

Tsui (1992) surveyed 1,001 engineers from 22 engineering companies in Taiwan in order to determine the main tasks employees were required to complete in English. The findings showed that engineers needed English to read manuals and reports (Tsui, 1992). Tsui's (1992) research further suggested that employees and employers in the engineering workforce were dissatisfied with their English and required English teachers and tutors to assist them to improve their language skills. Yet, Tsui's (1992) research only involved 6 citations to other scholarly work and the survey instrument was designed according to a set number of pre-determined English language skills based on this limited literature review. Without further investigation using qualitative methods such as in-depth interviews, it is not possible to produce a rich and

comprehensive taxonomy of language use in the workplace. Rather than large scale surveys with pre-determined categories of language use, I will use in-depth interviews to gain an understanding of engineering and business professionals' perceptions of their language use in the workplace. In addition, Tsui's (1992) work, although groundbreaking and providing an important foundation for future work, did not address the educational context.

Two decades after Tsui's (1992) pioneering work, Spence and Liu investigated language use in engineering, especially in relation to technology. Spence and Liu (2013) interviewed engineers and collated key tasks and skills required for functioning in the workplace, such as email reading and writing, report writing across a range of engineering genres, conference calls and intercultural training. Apart from the use of new technology, Spence and Liu's (2013) findings regarding key tasks for engineers using English in the workplace were similar to those of Tsui (1992), with report reading and writing and interacting with supervisors, subordinates, and clients deemed some of the essential duties. A methodological issue that may have impacted Spence and Liu's (2013) study was that their participants did not allow audio recording of interviews due to confidentiality issues. Without an audio recording, the researchers had to rely on their field notes. This may have limited the depth of data able to be gathered through interviews. Fortunately, I was able to gain the consent of all participants in my study to allow audio recording of interviews.

Another interesting finding from Spence and Liu's (2013) research was the identification of an overlap of skills and linguistic proficiencies needed in EE and BE.

Yet, Spence and Liu (2013) only investigated an engineering firm and did not research the business workforce, so there was no further explanation regarding how this finding of overlapping skills in EE and BE was ascertained (see Spence and Liu, 2013). Therefore, to complement existing studies, I will investigate both the engineering and business workforces to analyze and compare English language use in these contexts.

Another important feature of my research that will allow my findings to complement existing studies of Taiwanese ESP education is that I will include the voices of students and employees from a range of educational and professional stages. Fourth year students naturally have more study experience than their first year peers and this may impact their perceptions of the effectiveness of current ESP education. Likewise, entry and mid-level employees may have different insights and experiences regarding the use of English in the workplace when compared to employees in leadership positions.

I will record voice data during interviewing so as to enable systematic and in-depth analysis. My investigation will not simply analyze language skills but also the inter-relationship among these skills. This means that my research will produce a taxonomy of language use – a complex picture of interrelated skills and functions – required for the engineering and business workplaces. This taxonomy will provide greater detail regarding the socio-cultural and pragmatic uses of English than the existing lists of tasks or skills. In this way, I seek to fill a gap in existing research regarding ESP in Taiwan.

#### **1.4 Limitations of the Study**

This study focuses on the specific contexts of BE and EE in Taiwan. As such, the findings may not necessarily be generalizable across other ESP specializations. Further, current ESP methodology and teaching practices are evaluated from the point of view of students and graduates. Whilst this is a strength of the research – especially as the majority of existing literature focuses on teacher reports of practice with very studies providing input from learners – it is important to remember that a range of factors may influence student and graduate perceptions, including issues regarding their own self confidence as English users.

In this study, I have chosen to use qualitative methods to allow for a greater depth of understanding regarding ESP student and employee experiences and to compile a taxonomy of language use for the EE and BE contexts. Whilst quantitative methods can gather opinions from large-scale populations, I have deliberately selected small-scale qualitative methods to elicit in-depth information regarding each participant's perceptions of language use and learning experiences. My research applies one-on-one, face-to-face, in-depth and semi-structured interviews to allow for spontaneous responses which are more likely to raise unexpected issues that cannot be explored through ready-made questionnaires (Liebow, 1993).

### **1.5 Significance of the Study**

Chapter two will discuss the lack of existing Taiwanese ESP research addressing the use of English in the workforce. My research seeks to remedy this gap by interviewing

leader and non-leader employees in the workforce. In this sense, my study provides input from the authentic context of the professional domain. This is a major advantage for shaping ESP education; after all, ESP courses are designed to prepare learners for functioning in specific professional contexts and should therefore reflect the linguistic requirements of these target domains. It seems strange to omit this important source of information from research into ESP education.

In addition, the incorporation of views from first year to fourth year university students and early stage and senior professionals renders this project innovative and significant. The choice to include a range of stages in the sample population was made in an attempt to seek as broad a range of input as possible. Moreover, the comparison of the perceived requirements for English language use in both the engineering and business professions can shed the light on general and specific considerations for these important branches of ESP education in Taiwan. By analyzing data from users at different stages of their career and from both pedagogical and professional settings, this research seeks to gain a deep understanding of language use in the business and engineering workplace and evaluate whether graduates consider current ESP practices to be adequate preparation for language use in their professional lives.

## **1.6 Thesis Overview**

Chapter two will provide a survey of existing literature pertaining to the topic of Taiwanese ESP education. Important background information regarding English language education in Taiwan will be provided alongside specific attention to research

developments in the field of ESP. The field of Needs Analysis (NA) in language education will also be investigated as this has influenced the development of ESP education. Likewise, the Notional-Functional Approach and Task-Based Language Learning will be explored. The literature review will concentrate particularly on BE and EE as two of the most popular branches of ESP in Taiwan and the focus for this research.

Chapter three will explore the methodology utilized for this research. I will discuss the methodological choices in light of the research goals, namely: to investigate tertiary ESP students' and engineering and business professionals' perceptions regarding Taiwanese university preparation of graduates for the linguistic demands of the workforce. A participatory approach is applied to examining the student, engineering, and business employees' perceptions. The rationale and design of my methodology will be described, as will the process of data collection and ethical clearance.

In chapter four, the data from the workplace participants will be examined to develop a taxonomy of English language skills and functions for the engineering and business contexts. This taxonomy will be examined alongside the feedback from employees in order to evaluate the degree to which the research participants consider Taiwanese ESP education to be an adequate preparation for English use in the target domains. A comparison of English language uses in the engineering and business workplaces, and in entry/mid-level and senior employment positions, will be considered.

Chapter five will analyze the first and fourth year students' experiences in ESP

education in Taiwan. Specifically, the learners' perceptions of their language proficiency and the main challenges they encounter in seeking to increase communicative competence in English, will be discussed. Importantly, the taxonomy of language use in the engineering and business workplaces will be compared with current ESP curricula and methodology, and with student feedback regarding their learning experiences, in order to investigate whether ESP education adequately reflects the authentic use of language in the target domains.

With the application of my findings, chapter six will propose a framework of ESP curriculum to cater for the communicative needs of ESP learners. The main obstacles to achieving the goals of the Ministry of Education will be considered here with some suggestions for remedying these issues and maximizing learner outcomes. Furthermore, future research directions for enhancing ESP learner outcomes in Taiwan will be presented.

## **Chapter Two**

### **Literature Review**

This literature review will commence with a broad overview of existing research on Taiwanese EFL education. This will be followed by specific attention to developments in the field of ESP, particularly the influence of Needs Analysis (NA), the Notional-Functional Approach, and Task-Based Language Learning. The literature review will emphasise two prominent branches of ESP in Taiwan – English for Engineering (EE) and Business English (BE) – as these form the focus of my research. This chapter will identify key gaps in the existing literature on Taiwanese EE and BE education, in order to position my own contribution within the field.

#### **2.1 Overview of EFL in Taiwan**

Given the stated intentions of the government to increase Taiwanese EFL students' communicative competence and the significant expenditure that has been directed to this goal, it is imperative that EFL teacher and student experiences of communicative approaches to language instruction are subject to careful, systematic research. However, there are few existing studies investigating attention to communicative competence in the Taiwanese EFL classroom and still fewer studies examining student perceptions regarding communicative competence. This is one of the main rationales for my research topic – to provide a rich and detailed insight into current and former

students' perceptions of the degree to which ESP education provides preparation for the communicative competence requirements of the workplace.

Attention to communicative competence within language instruction is a hallmark of the Communicative Language Teaching (CLT) approach. Key proponents of the communicative approach argue that classroom activities must mirror the complex, social use of language in 'real world' settings (Widdowson, 1979). Of the few studies that examine CLT in EFL teaching in Taiwan, Chang and Su (2010) and Chern (2010) have made important contributions. Their work provides significant insights into junior high school and university teacher perceptions of CLT (Chang & Su, 2010; Chern, 2010).

In order to investigate the attitudes and beliefs of English teachers at junior high schools, Chang and Su (2010) surveyed 32 teachers of 7<sup>th</sup> to 9<sup>th</sup> graders in one county in central Taiwan. The researchers then interviewed 7 teachers as a follow-up to the survey. The findings indicated that the teachers considered CLT to be an important teaching methodology, but seldom used this approach in their own classroom practice. The teachers complained that their implementation of CLT was restricted by pressure from their supervisors and students' parents who expected students to have good test results in high school entrance examinations rather than improved communicative competence (Chang & Su, 2010). These teachers explained that they focused on preparing students for entrance tests, which required the memorisation of vocabulary and grammatical structures rather than learning to communicate in the foreign language (Chang & Su, 2010). Whilst the teachers admitted that CLT approaches were not fully implemented in their classrooms, they considered their students to be highly

motivated to learn English and to have expectations of mastering the language. The mean survey score in terms of motivation and expectations for learning English was 4.07 and the standard deviation was 0.65 within a five-point Likert scale (Chang & Su, 2010). However, as Chang and Su (2010) admit, the findings from a small-scale study may not be generalizable across the whole population of teachers in Taiwan. Further, I argue that the evaluation of EFL education should include feedback from students. As such, my research complements this existing study by exploring students' perceptions of their experiences with ESP education, their communicative competence, and their future prospects for English use.

Chern (2010) has conducted larger scale research in Taiwanese English education, utilising both qualitative and quantitative approaches. Chern (2010) interviewed the coordinators from twelve Taiwanese universities in order to examine the nature of EFL education for university students and discovered that little communicative practice was applied in English classrooms. Chern (2010) revealed that there were conflicts between the government's goal of expanding students' communicative competence, and the practical situation of Taiwanese ESL classes, which tended to be too large for communicative language use.

Chern's (2010) research discovered that since 2009, sixty-seven out of one hundred and sixty five Taiwanese universities had adopted English proficiency standards as part of the criteria to obtain a bachelor's degree. Yet Chern's (2010) research also indicated that the majority of Taiwanese universities focused their EFL teaching on reading comprehension rather than communicative competence, with listening, speaking and

writing skills seldom taught. Head teacher participants in Chern's (2010) study stated that communication was not a key aspect of English education in Taiwanese universities and students' communicative competence was not adequately fostered.

The main findings of Chern's research (2010) also indicated that teachers rarely conducted needs analyses for Taiwanese learners and ESP instructors tended to be linguistic or literature experts but not experts in the specialist discipline (e.g. in business or engineering). Accordingly, Chern (2010) suggests that language teachers should develop their discipline area knowledge and expertise in order to better fulfill the role of ESP educator. Significantly, Chern's (2010) research also revealed that English language learner motivation diminished from the first year to the fourth year of study and that students considered English language learning in Taiwanese universities to be stressful. Similarly, research by Wang and Liao (2012) has also revealed university student anxiety regarding English language learning. According to Chern (2010) and Wang and Liao (2012), the majority of Taiwanese universities have implemented English proficiency standards as criteria for eligibility to graduate, yet students are not confident of reaching the required standards (Chern, 2010; Wang & Liao, 2012).

Indeed, existing literature regarding EFL in Taiwan suggests that the test-oriented culture of the education system negatively impacts the learning motivation of Taiwanese students (Chu, Huang, Shih, & Tsai, 2012; Liao & Chen, 2012). Chu, Huang, Shih and Tsai (2012) surveyed 253 first year students who were studying in a university in Taiwan in order to analyze student motivation and the learning strategies applied at

different levels of proficiency (Chu et al., 2012). Chu et al.'s (2012) findings indicated that high proficiency students used more learning strategies than those with lower proficiency levels and suggested that EFL teachers could promote better language learning outcomes by explicitly examining and teaching learning strategies in class (Chu et al., 2012). Therefore, the research suggested that instruction in language learning strategies could also promote students' motivation to learn (Chu et al., 2012). Although Chu et al.'s (2012) research was limited to examining learning strategies for reading rather than general communicative competence, this research provides interesting findings concerning the promotion of student motivation through attention to cognitive engagement and learning strategies.

Liao and Chen (2012) implemented an experimental syllabus to increase college students' learning motivation by providing various games to 79 students for a 20-hour English course. Liao and Chen's (2012) innovation received positive feedback from the student participants, with survey results indicating that they enjoyed the incorporation of educational games into the English course. However, an in-depth impression of teaching and learning outcomes was not attained due to the employment of a five-scale questionnaire to survey students. Also, the small-scale nature of the study and the minimal teaching hours of the course mean it is difficult to know if the results would be generalizable. Further research would be needed to evaluate whether the game-oriented course would be sustainable across various EFL contexts in Taiwan. Yet, Liao and Chen's (2012) research is a reminder that increasing student motivation is an important area for EFL education in Taiwan. As such, in my research, I particularly focus on assessing ESP learner motivation and eliciting feedback on how to enhance

and promote engagement with language learning.

According to the existing research on EFL learners in Taiwan, low motivation is not the only problem. Various researchers identify listening and speaking skills as the main areas of weakness for Taiwanese EFL learners, while reading and writing skills are much stronger (Chia, Johnson, Chia, & Olive, 1999). For instance, in pioneering NA research in Taiwan, Chia et.al (1999) conducted a survey of 349 medical students and 20 faculties in a Taiwanese medical college in 1993 in order to better understand the English language requirements of Taiwanese medical students. The findings, published in 1999, indicated that the students perceived listening and speaking skills to be their weakest areas of language proficiency and they suggested that at least one year of ESP coursework was required to adequately prepare them for the medical workplace (Chia et al., 1999). The importance of ESP education to prepare Taiwanese learners for their professional lives has been identified in a range of studies to be examined later in this chapter.

## **2.2 Communicative Competence in Language Teaching**

Communicative competence has been an important goal of language education in the United States and the United Kingdom since the mid-1970s (Richards & Rogers, 2001). As mentioned in chapter one, scholars have defined communicative competence in varying ways (Canale & Swain, 1980; Hymes, 1972, 1966; Johnson, 1982; Savignon, 1997; Widdowson, 1972). The work of these scholars will be discussed now with particular reference to their contributions to the notion that grammatical knowledge

alone does not constitute language proficiency. Rather, proponents of communicative competence suggest that pragmatic, socio-cultural, and functional knowledge and skills are also required for appropriate language use (Canale & Swain, 1980; Hymes, 1966, 1972; Johnson, 1982; Savignon, 1997; Widdowson, 1972).

Notions of communicative competence stem from interactionist views of language acquisition (Lightbown & Spada, 1999). In the 1940s and 1950s, the behaviorist theory of language learning was popular. This approach considers language learning to be a process of habit formation in which repetition and reinforcement are key (Bloom, Hood, & Lightbown, 1974; Lightbown & Spada, 1999). In reaction to behaviorist views of language acquisition, Chomsky (1959) proposed the innatist theory, suggesting that all humans have a language acquisition device (LAD) – later replaced with the concept of universal grammar (UG) – and simply required exposure to language forms to enable acquisition. Another perspective, interactionism, was proposed by Halliday in the 1970s, emphasizing that language acquisition is an inherently social process in which learning a language is ‘learning how to mean’ (Halliday, 1975). This approach advocates that language learning requires interaction with other counterparts, not merely imitation or activation of innate universal grammar due to exposure to language forms (Ginsburg & Opper, 1969).

Building on this notion of language acquisition as a social process, the idea of communicative competence is associated with Hymes’ work (1964). Hymes’ ethnographic research identified the relationship between communicative forms and social functions (Leung, 2005). Hymes’ theory analyses communication with a broad

view to the socio-cultural context of practices and beliefs in a specific culture or speech community (Cameron, 2001; Hymes, 1964). Hymes (1972) has emphasized that linguistic skills are not sufficient to ensure appropriate communication, suggesting that communicative competence should be the essence of second and foreign language teaching/learning (Hymes, 1966).

Additionally, Halliday (1970) contributed to the theory of communicative competence with focus on the functions of language. Halliday (1970, p.145) emphasised meaning: 'with the description of the speech acts or texts, since only through the study of language in use are all the functions in language, and therefore all components of meaning, brought into focus'. Hymes (1972) and Halliday (1970) have specified that communicative competence, not merely grammar, should be the overriding aim of language teaching.

In the early 1980s, Canale and Swain (1980, 1981) elaborated upon the notion of communicative competence, deeming grammatical competence to be merely one of the three required elements (Canale & Swain, 1980, 1981). In this model, the ability to apply grammatical knowledge is joined by sociolinguistic knowledge and strategic competence. According to Canale and Swain, language learners need to master not only grammar but also the knowledge required to select appropriate language forms and to employ problem-solving strategies when encountering difficulties in communication (Canale & Swain, 1980, 1981).

Bachman (1990) agrees that successful grammatical learning does not guarantee language competence. According to Bachman (1990), language competence is comprised of four proficiencies: organizational competence, pragmatic competence, strategic competence and psycho-physiological mechanisms. Bachman (1990) explains that organizational competence involves grammatical and textual proficiency; pragmatic competence includes illocutionary and socio-linguistic proficiency; strategic competence is related to achieving communicative goals through planning and executing the communicative intention; and psycho-physiological mechanisms involve the neurological and psychological processes that are active during the production and understanding of language. In my research, I will examine whether students and graduates of ESP in Taiwan are aware of the notion of communicative competence, how they define the key proficiencies involved, and whether they feel they have sufficient communicative competence to function in the engineering and business workplaces.

### **2.3 Communicative Competence in ESP Research**

In terms of ESP education outside of Taiwan, existing research emphasizes the importance of communicative competence to achieving professional success. Communicative competence has even been defined as a primary competence required to survive in the engineering industries in Malaysia (Kassim & Ali, 2010).

In order to innovate the English curriculum for engineering students, Kassim and Ali (2010) investigated important communication skills and frequent communicative

events undertaken by engineers, surveying staff members from ten chemical companies around Malaysia. The findings suggested that in order to function within the engineering workplace, oral fluency in English was valued as an important skill (Kassim & Ali, 2010). In fact, Kassim and Ali (2010) found that strong English language speaking skills were necessary for international recruitment (Kassim & Ali, 2010). Moreover, the findings showed that the engineer participants perceived networking for contacts and advice, teleconferencing, and expressing new ideas and alternative strategies to be the most important tasks in which English was required (Kassim & Ali, 2010). These tasks not only require oral fluency, but also socio-cultural and pragmatic proficiency, which are central to communicative competence.

Similarly, Kaewpet (2009) analyzed the communicative needs of Thai engineers in order to inform ESP curriculum design. Kaewpet (2009) investigated five groups: civil engineering graduates, ESP teachers, civil engineering lecturers, civil engineers and employers. Like Kassim and Ali (2010), Kaewpet's (2009) study identified the importance of oral fluency and communicative competence to the work of Thai engineers, who were required to communicate with international colleagues as an essential component of their role. Thanks to the multiple groups of participants in Kaewpet's (2009) study, the findings not only discerned the English language requirements in the engineering workforce but also established key objectives essential to the proper preparation of engineering students for the communicative challenges of their future profession. The research suggested that the ability to read text books, professional materials and manuals, to talk about daily tasks, and to write

periodic/progress reports should be fostered in ESP courses for Thai engineering students (Kaewpet, 2009).

Kaewpet's (2009) work is an important contribution to the ESP field, representing a foundational study of the target domain as an important source to inform curriculum innovation. My work will complement Kaewpet's (2009) study by situating the research in a Taiwanese context and by expanding on the concept of listing key tasks from the target domain. My study will produce a taxonomy of language use in the engineering workplace, not only listing key skills or tasks but examining the inter-relationship among these important tasks or skills for a broader and more holistic overview of language use. As Kramsch (1993) has argued, competent language use not only involves key skills but also requires an understanding of the inter-relationship among these skills.

Male, Bush and Chapman (2009) have also sought to identify the significant competencies required of engineers in order to innovate engineering education in Australia. The researchers discovered that the use of English for written communication, teamwork, and problem solving was key (Male, Bush, & Chapman, 2009). The study involved 500 engineers completing questionnaires which listed 60 categories of competencies, and gained 203 responses (Male et al., 2009). The findings showed that the competencies required of engineers in Australia were similar to those required in the USA and Europe (Male et al., 2009). Nonetheless, as the categories of competencies were assumed, it would be profitable to follow this study with qualitative approaches to explore participant responses in order to discover whether

new categories of language competencies might be revealed. Rather than assuming a pre-determined list of skills, my study will employ in-depth interviews featuring open-ended questions to elicit rich feedback. This will allow participants to articulate their perceptions regarding language needs for the workplace, creating the opportunity for discussion of tasks or functions not anticipated by the researcher.

Communicative competence has also been an important focus of international research regarding Business English (BE). One cross-national research project between the United States and Singapore successfully demonstrated the feasibility of collaborative teaching not only on an inter-disciplinary but also international basis (Connor, Rogers & Wong; 2005). This research involved two universities cooperating to assess the English language learning outcomes of students attending business courses (Connor, Rogers & Wong; 2005). The findings of the research suggested a shift in focus from grammar-oriented to communicative competence-oriented English instruction is an important means of increasing learner outcomes in English for business education (Connor, Rogers, & Wong, 2005).

According to Meredith (2012), communicative competence is also esteemed as one of the main competencies in Master of Business Administration (MBA) courses in the United States. Meredith (2012) documented MBA courses from a business communication perspective, and suggested that educators in business communication areas should consider social media as an essential source for studying and teaching MBA courses. Explaining that most corporations use social media as a platform to promote their products and disseminate their advertisements, Meredith (2012)

suggested that successful navigation and exploitation of social media requires communicative competence. According to Meredith (2012), MBA students should therefore be prepared for the workplace by ensuring they have the required skills to use social media to communicate with potential clients and advertise their products.

Meredith's (2012) research revealed three main aspects pertinent to the use of social media in the ESP business curriculum. Firstly, reading and writing skills were integrated with the use of online social networks, including Facebook, LinkedIn, and Twitter. Students learned business communication in an authentic and meaningful fashion through online networks and interaction with peers around the world. Secondly, the practice of group project writing was incorporated into the course, with the addition of an actual client who could provide updated business information for learners. Third, the practice of individual project writing involved the analysis of existing social media platforms in business communication by using monitoring tools such as Social Mention, and recommendations as to how to improve the social media development of the allocated client's company. This type of authentic and relevant ESP learning represents an exciting new direction in education. In my research, I seek to discover whether Taiwanese ESP learners are exposed to teaching methods that incorporate business communication networks and cooperation with actual clients.

#### **2.4 The Notional-Functional Approach and ESP**

Communicative approaches to language education have dominated the field for the last few decades, particularly in western contexts (Candlin, 1976; Hymes, 1972;

Richards & Rodgers, 2001; Widdowson, 1978). A major approach to emerge from the shift to a communicative language teaching model was the Notional-Functional approach by Wilkins (1972). Wilkins (1972) compiled communicative acts into two main categories; notions and functions. Notions encompass 'real life situations in which people communicate' such as expressing time, quantity, sequence, location and frequency (Wilkins, 1972, p.1). Functions are the specific intentions for the communicative act such as offering assistance, requesting help, denying an accusation, making a complaint or issuing an apology (Wilkins, 1972). Finocchiaro and Brumfit (1983) define a notion as denoting a specific context in the real world and a function as denoting a particular purpose for a speaker in that context.

The distinctive characteristic of a Notional-Functional syllabus is that instruction is not centred on grammatical structures but rather the functions of language in daily life. Grammar rules and vocabulary items are selected according to the functions being learnt (Richards, 2006). Communicative competence is valued as the optimal goal in such a syllabus (Finocchiaro & Brumfit, 1983).

The Notional Functional approach has had an important influence on ESP education. As stated earlier, ESP education involves using the target language to learn about a specific professional or academic context (Hutchinson & Waters, 1987). For example, the functions of English for Academic Purposes (EAP) are to assist students to learn the knowledge and skills required to achieve high academic success in their specific subjects (Jordan, 1997, 2002). In terms of EAP, study skills, note-taking, reading

strategies, understanding genres, and essay writing skills are key foci (Flowerdew & Peacock, 2001; Hyland & Hamp-Lyons, 2002; Jordan, 1997; Waters & Waters, 1992).

Despite the influence of the Notional Functional Approach in ESP education, most research in ESP discusses notions and functions without a comprehensive analysis of the target domain context. For example, Tsui's (1992) survey of 1,001 engineers from 22 engineering companies in Taiwan was a ground-breaking study in terms of determining the main tasks that employees were required to complete in English. The main findings were that engineers required English for manual and report reading, and that employees and employers in the engineering workforce were dissatisfied with their English proficiency levels, frequently requiring English teachers and tutors to assist them to improve their language skills (Tsui, 1992). Yet Tsui's (1992) research did not involve a rich analysis of the target domain. Likewise, research by Spence and Liu (2013) that identified the main English language tasks in engineering as participation in conference-calls, report writing, and email writing and reading, did not provide an analysis of the social context of the workplace.

Kramsch (1993, p.67) describes the social context of language use with an emphasis on the inter-relationship among five dimensions: 'linguistic, situational, interactional as well as cultural and intertextual'. Understanding the complex relationship between these dimensions elevates ESP research beyond the composition of lists of tasks to allow for the provision of a more holistic picture of the target domain. For this reason, my research aims to develop a taxonomy of English requirements for the professional contexts of engineering and business in Taiwan. Such a detailed overview of the

linguistic requirements and characteristics of the professional context will better inform ESP curriculum design and better prepare students for the realities of the workplace.

## **2.5 The Role of Needs Analysis in ESP**

Long (2005) describes Needs Analysis (NA) in language teaching as having a similar purpose to a doctor assessing a patient's symptoms in order to come to a diagnosis. Needs Analysis allows the teacher or researcher to assess each student's linguistic strengths and weaknesses in order to develop a learning plan to enhance their proficiency. NA in language education also involves the diagnosis of specific situations, tasks, skills, or other potential competencies the student will require in order to communicate with the members of a specific context, such as the workplace (Long, 2005). Conducting systematic and comprehensive needs analyses ensures the curriculum remains relevant to each student's needs and can adequately prepare learners for their future roles in the workplace. Moreover, Needs Analysis involves the assessment of students' perceived needs, specific learning desires, and affective factors (Hutchinson & Waters, 1987). By looking at the development of Needs Analysis, we can see that the themes and foci have shifted along with the growth of ESP.

In the late 1970s, Munby (1978) used target situations in the workforce as units to survey student needs as part of the Communication Needs Processor (CNP) approach. However the CNP approach examined target situations in the workforce without investigating the learning process or learner perceptions. In the 1980s, Hutchinson and

Waters (1987) proposed a learning-centred approach to Needs Analysis, emphasising the significance of learners' perceived needs and wants. Affective factors became more prominent in needs analysis models of the 1980s and were thought to be represent an important aspect of student motivation (Hutchinson & Waters, 1987). Furthermore, a greater emphasis on maximising learner outcomes through enjoyment of language learning was proposed (Hutchinson & Waters, 1987). The aspects of psychology in language learning, including motivation, attitudes toward learning, and confidence of learners became increasingly important in Needs Analysis (Cameron, 2008; Gardner & Lambert, 1972; Wu, Yen, & Michael, 2011).

Stern (1983) documented affective issues associated with language learning, referring to these aspects as 'emotional complexes' (p. 292). Stern (1983) further categorized general psychology in language learning into the themes of perception, memory, motivation, thinking and emotion. According to Stern (1983), most of the studies between the 1900s and 1970s related to speech development in early childhood rather than EFL learners. The interaction between linguistic and psychological aspects of foreign language learning began to draw the attention of educators in the 1950s (Stern, 1983). The term 'psycholinguistics' was defined by Osgood, Suci and Tannenbaum (1957, p.4), as the study of 'relations between messages and characteristics of human individuals who select and interpret them'.

To date, ESP research in Taiwan has featured minimal attention to the psychological or affective elements of language learning. Existing studies tend to employ quantitative approaches to data collection. As discussed by Tierney & Dilley (2001), quantitative

methods such as surveys are useful for larger studies however they are unlikely to elicit rich data concerning the affective aspects of language use. As previously mentioned, Chia, Johnson, Chia, and Olive (1999) conducted a large-scale study of the linguistic needs of Taiwanese medical students. The survey findings indicated that both students and faculty perceived ESP to be a fundamental tool in facilitating academic and professional performance. Reading English-medium textbooks and medical articles were identified as some of the most demanding tasks facing students (Chia et al., 1999). Further, the study indicated that students and faculty suggested that ESP should be taught from first year and that advanced ESP and listening skills should be offered throughout the students' medical degree (Chia et al., 1999). Yet, without qualitative methods of data collection and analysis, the affective elements of language learning and the use of English in the medical workplace could not be fully understood.

Likewise Tsui's ground breaking survey of language use by 1,001 engineers from 22 engineering companies in Taiwan did not address the affective aspects of English use in the workplace. I seek to compensate for this lack of attention to affective elements in Taiwanese ESP research by ensuring my study provides the opportunity for rich, in-depth exploration of learner motivation, confidence, and attitudes to the foreign language.

Accordingly, my work will complement existing research such as Yang's (2006) study of the language needs of doctoral students in Taiwan. Yang's (2006) survey indicated that whilst students identified reading and writing skills as the most needed abilities for their future profession, they expressed a greater desire to improve their listening and

speaking skills. Significantly, Yang's (2006) research indicates that learners' perceived needs may vary from their language learning desires. As with other literature reviewed previously, Yang's (2006) study would benefit from a qualitative follow up in order to gain a deeper understanding of students' intentions and specific language learning needs and desires.

### **Task-Based Language Teaching in ESP Needs Analysis**

Since the 1990s, Task-Based Language Teaching (TBLT) has grown in popularity and has impacted approaches to NA, with tasks featured as units for analysing needs (Donna, 2000; Ellis, 2003; Long, 2005; Nunan, 2004; Swales & Feak, 1994). Seven principles for TBLT have been summarized by Nunan (2004): scaffolding, task dependency, recycling, active learning, integration, reproduction to creation and reflection. Firstly, scaffolding refers to a supporting framework within which novice students can learn from peers and the teachers; the scaffolding will be removed when learning reaches a particular stage (Nunan, 2004). Secondly, task dependency refers to the fact that each task is built on the one previously learnt in order to systematically build on learners' knowledge and abilities (Nunan, 2004). Recycling refers to the fact that the learnt language is reintroduced in different linguistic contexts in order to assist learners to consolidate their understanding (Nunan, 2004). Active learning is based on the principle that students learn by doing – through the application of their own knowledge rather than via teacher demonstrations or instructions (Nunan, 2004). Integration denotes that learners should be clearly informed about the interrelationship among communicative function, linguistic form and semantic

meaning (Nunan, 2004). Reproduction to creation refers to the notion that students begin by reproducing language models offered by the teacher and go on to manipulate the form to create language to express their own thoughts (Nunan, 2004). Finally, reflection refers to the fact that that learners are responsible for examining what they have learnt and evaluating the efficacy of their learning (Nunan, 2004).

As with CLT, TBLT features a fundamental emphasis on meaningful communication (Nunan, 2004). The innovative characteristic of TBLT is that it allows learners to communicate with the teacher and peers by fulfilling meaningful tasks in the process of collaborative learning (Nunan, 2004; Richards & Rodgers, 2001). This requirement for learners to complete assigned tasks is considered essential to facilitating the development of communicative competence (Richards & Rodgers, 2001). Nunan (2004, p.1) has stated: 'with concerns of authentic texts and the learning process itself, TBLT is the linkage of classroom language learning with language use outside the classroom'.

With the advent of TBLT, NA has shifted from an emphasis on target situations to also incorporate a focus on tasks (Long, 2005). As such, researchers are increasingly analysing the tasks that take place in the workforce. For example, as mentioned earlier in chapter two, Kaewpet (2009) has examined the daily tasks required of engineers in Thailand. Similarly, research by Spence and Liu (2013) identified target domain needs for EE learners in Taiwan, with findings revealing that conference calls and report writing in engineering genres are particularly important tasks.

However, simply examining tasks may not allow for a complete understanding of learners' specific needs or wants. Rich, in-depth qualitative research investigating learner and employee perceptions regarding preparation for using English in the business and engineering professions in Taiwan, may lead to Needs Analysis that has the potential to inform and improve ESP curricula. For this reason, my research involves in-depth interviews with participants – employees and learners – to enable identification of both target domain tasks and perceptions and affective elements of language use.

### **Authenticity in Needs Analysis and ESP**

The gradual shift toward tasks and target domains in NA has been accompanied by a growing concern with authenticity (Chew, 2005; Connor et al., 2005; Cowling, 2007; Kaewpet, 2009; Kankaanranta & Louhiala-Salminen, 2010). Target situation analysis in language education – an approach that has increased since the 1980s – aims to introduce learners to the situations where English is used in the workforce. The selection of authentic materials also reflects this trend toward authenticity in language instruction.

A distinctive feature of authenticity-focused teaching is reflected in the application of technology, which involves computer assisted language learning (CALL), digital classroom activities, and real time communication across countries (College English, 2009). In Taiwan, technology is often applied through the playing of a DVD or CD in the classroom for English listening. However, some universities, such as Normal University

and Dam-Kang University, feature more meaningful use of technology enabling real-time communication between students in Taiwan and the USA (College English, 2009). Such teaching activities are intended to create opportunities for authentic communication in real life situations.

However, authenticity in language education is a controversial topic. The question 'How authentic is authentic?' has been debated among experts (Halliday, 1989; Kramsch, 1993; Widdowson, 2004). If the ESP text is authentic but the context, in most cases, the university classroom, is inauthentic, how can teachers guarantee their lessons will adequately prepare students for the linguistic needs of the workplace? Widdowson (1979) reminds educators to look at the language 'usage' but also the language 'use'. As Widdowson (1979) and Kramsch (1993) have stated, language use involves not merely authentic texts but also authentic contexts. According to Widdowson (1979), authenticity in language use includes the way we treat the text, and the way we respond to the text. Both of these factors are dependent on the reader or listener's knowledge of context. Despite the controversy surrounding authenticity in language teaching, the notion of meaningful, 'real world' applications for language learning remains influential in NA.

## **2.6 Multiple Sources for Needs Analysis in ESP**

Another important emphasis in the field of NA is the necessity of including multiple sources of data regarding learner needs (Frederick & Huss-Lederman, 1998; Holmes, 2005; Jasso-Aguilar, 2005; Kaewpet, 2009; Kassim & Ali, 2010; Long, 2005). The

analysis of data from multiple sources is often termed triangulation (Lincoln & Guba, 1985; Lynch, 1995). Triangulation can increase the validity of research as this method analyses data from three different sources. In contrast, the data collected from a single group may yield biased findings. For example, if researchers merely investigate the needs of EE education from the students' perspective, they may overlook the opinions of employees in the workforce. Long (2005) has analyzed and compiled a list of methodologies for NA in language teaching. According to Long (2005), a sound investigation of learner needs must include language users in the authentic context; e.g. in professional settings.

In terms of NA in Taiwan, there is very little research conducted with multiple sources and methods, except for the research by Chern (2010), Tsou and Kao (2013), and Liu and Spence (2013), which will be analysed later in this section in order to provide a chronological review of existing literature. Nevertheless, to date, there has been no research involving the systematic analysis of perceptions of language learning needs including ESP learners, engineers and business employees. My research seeks to compensate for this gap in existing literature and maximise findings by including multiple sources.

Huang (1997) was the first ESP educator to survey the perceptions of teachers in Taiwan. Huang (1997) investigated multiple sources in order to gauge perceptions regarding proposals to establish ESP education in Taiwanese universities. In order to understand prevailing attitudes, Huang (1997) surveyed five groups regarding the intention to institute ESP courses in universities: English coordinators, English teachers,

subject teachers, graduates and freshmen from seventeen universities. The findings indicated that the majority of the coordinators were not enthusiastic about instituting ESP courses and they identified a lack of qualified ESP teachers as one of the main concerns (Huang, 1997). The application of multiple sources of data is a clear strength of Huang's research. However, as with other ESP research, a lack of qualitative methods limits the depth of understanding regarding participant perceptions.

In 2008, research into ESP education in Taiwan indicated that students were more interested in ESP than their teachers (Tsao, Wei & Fang, 2008). Similar to Huang's findings (1997), this NA identified a lack of adequately qualified ESP teachers as one of the chief obstacles to developing ESP education in Taiwan (Tsao, Wei, & Fang, 2008). The research surveyed opinions and attitudes toward ESP and ESP-related issues with a population of 24 English teachers and 353 students in a technological university in Taiwan (Tsao et.al, 2008). According to the results both student and teacher participants shared similar opinions regarding three aspects: students' basic language skills should be improved before they took advanced ESP courses; ESP teachers should be qualified to teach English whilst also possessing knowledge of the discipline (e.g. business, health, or engineering); and ESP education in Taiwan was subject to a range of problems including a lack of qualified teachers, limited hours of instruction, and insufficient opportunities to use English in daily life. Interestingly, the findings showed that students perceived ESP to be more effective than English for General Purposes (EGP) in improving language proficiency. However, again, a lack of qualitative methods limited the depth of findings regarding student perceptions. My research will interview

first year and fourth year students as well as graduates, in order to understand learner needs and desires at different stages of the tertiary studies.

Su (2005) has also undertaken research involving multiple sources of data. In order to understand attitudes toward ESP education, Su (2005) surveyed college students and interviewed the heads and teachers of Applied Foreign Language and English Departments from four Taiwanese technical and vocational colleges. According to Su's (2005) research, the majority of heads, teachers, and students perceived ESP education to be beneficial to students' preparation for entering the workforce. However, the findings also showed that there was a lack of ESP teacher training, which was consistent with Huang's (1997) earlier findings (Su, 2005). Of particular note is the fact that Su's (2005) research was conducted seven years after Huang's study, yet the issue regarding the lack of qualified ESP teachers seemed to remain unresolved.

Another Needs Analysis of ESP education at the tertiary level was conducted in 2007 and was updated for five years with the support of the National Science Council (Tsou & Kao, 2013). This study introduced new ESP courses to a Taiwanese university and then surveyed 1,000 second year students and interviewed 7 English teachers and 30 subject professors from a variety of disciplines (Tsou & Kao, 2013). Surprisingly, the majority of subject professors suggested that ESP courses should only focus 30% of teaching time on subject specific contents with 70% of time devoted to language learning (Tsou & Kao, 2013). However, this research only looked at the needs of the second year students with no inclusion of senior students who have more study experience and may be able to articulate their language learning needs more clearly

(Tsou & Kao, 2013). To address this issue, my research will examine language needs across a range of education stages.

Whilst Huang (1997), Su (2005), and Tsou and Kao's (2013) research focused on the stakeholders from universities, omitting those from occupational settings, Spence and Liu (2013) examined the workforce of a leading semi-conductor manufacturer in Taiwan to analyse the English language needs of Taiwanese engineers. The findings revealed that writing and participation in conference calls were the English language skills most required by engineers (Spence & Liu, 2013). This research applied both qualitative and quantitative approaches, which is rare in Taiwan. Nonetheless, the study emphasised the perceived needs of engineers without discussing the process of ESP learning.

## **2.7 Shifting Methodologies in Needs Analysis**

Since the 2000s, the trend in Needs Analysis has been to incorporate qualitative or mixed-methodology approaches in order to gain a deeper understanding of language needs (Gilabert, 2005; Jasso-Aguilar, 2005; Long, 2005). Nonetheless, questionnaires are often used in a quantitative approach and whilst these allow for large-scale studies, they restrict the responses available to participants and assume the important issues prior to the investigation (Tierney & Dilley, 2001). To avoid this pre-determination of key issues, I have chosen not to use questionnaires but rather to employ qualitative methods to collect data from multiple sources.

Gilabert's (2005) Needs Analysis of hotel employees in Spain is an example of the qualitative mixed-method approach in ESP research. Gilabert (2005) utilized three methods; participant observations, unstructured interviews and written questionnaires, and invited employees across sectors and job positions to participate. 19 unstructured interviews were conducted with 8 company representatives and 11 domain experts, and the findings revealed 43 specific English language tasks for hotel employees in Spain, including e-mail reading and writing and reading hospitality materials. A follow-up questionnaire designed, incorporating 35 task statements selected from the 43 English language tasks revealed in phase one (Gilabert, 2005). 59 companies completed the questionnaire (Gilabert, 2005). By triangulating the findings with three methods and multiple groups of participants, a multi-faceted view of the language needs of Spanish employees across a range of sectors emerged (Gilabert, 2005). An important finding was that most employees were in need of assistance to improve their English language proficiency in order to complete their professional duties.

In addition to collaboration across disciplines in universities, research has shown that cooperation among linguists and employees can also benefit ESP teaching and learning. For example, Cowling (2007) invited linguists, employers, and employees to participate in Needs Analysis in order to design a three-year language course for a leading company in Japan. Cowling (2007) discovered that needs analysis can be rendered more effective when employers, in-service employees, and teachers work together as a team with different areas of expertise.

This theme of collaboration is also evident in research concerning in-service language courses; courses provided for employees currently serving in the company (Cowling, 2007; Jasso-Aguilar, 2005). Long (2005) refers to in-service learners as 'insiders' and the teachers as 'outsiders'. Insiders are currently working in professional organizations in the specialist area and are familiar with the daily operations of their jobs; whereas outsiders are language instructors who are experts in linguistics but do not necessarily have a deep understanding of professional knowledge (Dudley-Evans & St.John, 1998; Long, 2005). The importance of 'insiders' and 'outsiders' collaborating to achieve the best ESP courses a major theme of research into the efficacy of in-service ESP courses (Dudley-Evans & St.John, 1998; Long, 2005).

Indeed, a Multiple-Disciplinary Approach has been adopted in Needs Analysis since the 1990s in order to enable greater collaboration among experts (Dudley-Evans & St John, 1998). Language instructors may not have job experience in specific areas of ESP, such as the business sector, but have expertise in linguistics and language teaching methodologies. In contrast, subject lecturers are the experts in the specific knowledge of the discipline, but do not necessarily share an insight into the principles of language learning and teaching. A Multiple-Disciplinary ESP Approach encourages collaboration among subject specialists and language teachers, strengthening curriculum design and team teaching endeavours (Dudley-Evans & St.John, 1998). For example, it is conceivable that the designer and instructor of a BE curriculum could benefit by consulting professors of business in order to enhance the content of the BE course. Likewise, team teaching between subject specialist professors and English teachers can maximise the range of learning experiences provided for students.

## **2.8 The Major Findings from Existing Needs Analyses in ESP**

This section will document the findings of existing Needs Analyses in engineering and business contexts in various countries.

### **The Findings in Engineering English (EE)**

Engineering English (EE) is one of the main sub-areas of ESP, and student needs in this specific field have been the focus of increased research over the previous two decades (Atai & Dashtestani, 2013; Harrison & Morgan, 2012; Jesus, 2005; Kaewpet, 2009; Paola, 1998; Spence & Liu, 2013; Ward, 2009). Ward (2009) has focused on learners with a low level of English proficiency in all engineering disciplines, and has produced an Engineering English word list, which provides key lexical items and grammatical rules for functioning in the profession.

In Europe, Jesus (2005) discovered that engineering students in Spain have low confidence when speaking or writing to others in English. Interviews with English language instructors revealed that the majority of engineering students had low levels of proficiency. The factors thought to contribute to this lower proficiency were the large sizes of English classes and the lack of opportunity to use English in daily life. According to Jesus (2005), there could be 175 students and one instructor in an English class. In such a learning environment, the instructor was unlikely to provide sufficient

interaction, oral communication or proper feedback on written work. The research by Jesus (2005) also signaled that engineering students were aware of the importance of English proficiency to their academic and professional life.

In Asia, Kaewpet (2009) suggests that the main situations for English use in the Thai engineering workforce include talking about everyday tasks and duties, reading manuals, and writing daily reports. In addition, Kaewpet (2009) has revealed several problems regarding EE education in Thailand, including learners' passivity toward producing language, learners' reluctance to use English as a tool for communication, and learners' difficulties in identifying main ideas when reading articles (Kaewpet, 2009). Consistent with Kaewpet's findings, Huang's (2005) research on Taiwanese learners and Cowling's (2007) Needs Analysis for Japanese learners also indicate that English learners in Asia tend to be silent and anxious when they have to use English to communicate with others. Indeed, passivity in communication is a major theme in the EE literature.

Research regarding Korean engineering students reveals that speaking has been perceived as the most important but also the most disappointing language skill (Kim, 2013). Kim's (2013) survey found that the majority of engineering professors, students and industrial workers perceived speaking skills to be the weakest aspect of graduate proficiency, compared with listening, reading, and writing skills. The majority of engineering professors and industrial employees considered Engineering English to be

a necessary course for engineering students (Kim, 2013). Kim's (2013) research included multiple sources and methods of triangulation. However, as her research applied quantitative approaches only, the categories of skills for EE were assumed in the survey and there was no opportunity for participants to propose additional skills.

In Hong Kong, Cheng's research (2008) applied textual analysis and ethnography to compare the use of English in three departments in a university: English, Land Surveying, and Geo-Informatics. Further, the project involved a cross-setting collaboration between the university and a civil engineering consultancy firm (Cheng, 2008). According to Cheng (2008), this project achieved a comprehensive analysis of both workplace and university discourse processes and products (Cheng, 2008). The findings suggested that ESP courses should be developed systematically and with long-term cooperation between researchers, ESP practitioners, and specialists in the professional area (Cheng, 2008).

In Taiwan, semi-conductor industries have become a popular employment area (Spence & Liu, 2013). High-tech institutes bring international sellers and buyers to Taiwan. Research has shown that English language communication in the workplace may therefore involve cross-cultural interaction among international engineers, traders, supervisors or colleagues. Indeed, several studies have shown that the main tasks for engineers are face-to-face or computer-mediated-communication (CMC), including conference calls or telephone calls, written reports for supervisor engineers, and conversations with colleagues – all conducted in English (Cowling, 2007; Kaewpet,

2009; Spence & Liu, 2013). There is a strong intercultural element in each of these tasks, particularly given the role of English as the global *lingua franca*.

In terms of needs analysis, current EE research rarely introduces a detailed process of language use but rather identifies situations or tasks in which communication occurs. Categorizing situations and listing tasks is beneficial for textbook design, but I suggest that there is a need to provide a richer description of the context of language use in the workforce. Therefore, my research intends to scrutinize the English language requirements of engineering and business employees in order to arrive at a taxonomy of language use. Such a taxonomy may contribute to ESP curricula innovation, ensuring that student needs are met and employees are properly prepared for the realities of English language use in the professional context.

### **The Findings in Business English (BE)**

In terms of Business English (BE), the investigation of language needs in the workforce has gained momentum since the 2000s (Chew, 2005; Cowling, 2007; Crosling & Ward, 2002; Jasso-Aguilar, 2005; Long, 2005). A significant trend within these needs analyses has been the growing importance of technology in the workplace. The expansion of technological modes of communication has brought about new linguistic requirements for business employees (Bauman, 1997). This is evident in research by Gimenez (2006) who analyzed 123 e-mails for business communication in Italy. The findings of this study indicated that employment within the international business community

required complex socio-cultural and grammatical proficiency in English, in order to read and respond to e-mails in culturally and linguistically appropriate ways (Gimenez, 2006).

Increased technology for communication has also brought about a greater need for intercultural communicative competence. For instance, Crosling and Ward (2002) examined the workplace needs and language use of EFL business graduates in Australia with specific reference to oral communication. The survey covered 24 companies, with the sample group randomly selected from the overall employee population. Researchers discovered that oral communication skills are key requirements for employers and are important in attaining professional advancement within the business industry (Crosling & Ward, 2002). English language use for formal presentations, meetings, and informal conversation were all deemed important, cultural issues regarding status, religion, and gender an important element of communicative competence (Crosling & Ward, 2002). Crosling and Ward (2002) further advised that undergraduates should be provided with opportunities to practice informal oral communication when studying EE, as this form of communication is extremely important in the workplace.

The economic and professional advantages of higher English language proficiency was also emphasized in needs analysis conducted in Hawaii, USA, that examined hotel employees' English language requirements in the hospitality industry (Jasso-Aguilar, 2005). The findings revealed that hotel employees with sufficient language skills were able to take advantage of business opportunities and create greater profits for

individuals and hotels (Jasso-Aguilar, 2005). Likewise, Chew's (2005) investigation of employee language needs in four Hong Kong banks revealed that a considerable number of staff lacked the necessary English language proficiency and this limited their work and future prospects in banking (Chew, 2005).

In 2007, Cowling, a language expert from the US, was recruited to assess employee language needs and to design English language syllabuses for staff members in a Japanese company. Employees and employers were invited to assess their own language learning needs (Cowling, 2007). In response to this NA, three-year language courses were designed and implemented, with attention to business related discourses incorporated into teaching materials. Discursive norms for greetings, small talk, hosting visitors, entertaining, asking about preferences, explaining Japanese culture, answering and transferring telephone calls, apologizing, placing and giving purchase orders, filling in forms, describing products and companies, engaging customers, giving examples and suggestions, and basic negotiation skills were explored (Cowling, 2007). Respectably, Cowling (2007) recommended hands-on experience as vital for BE learning and for the adequate preparation of students for the workplace.

## **2.9 Summary of Major Themes in ESP Literature**

This review of the literature in EE and BE shows that NA in ESP education is not only concerned with understanding language learners but also language users; i.e. the real world use of the language in the target domain (see Table 2.1). I argue that an adequate needs analysis must be the product of investigation of Taiwanese learners

and Taiwanese users in the workforce. Surprisingly, existing needs analyses have utilised surveys rather than qualitative approaches, and researchers have tended to list discrete skills or situations. This may be due to difficulties in acquiring business employee and manager participants for studies. ESP researchers tend to have sophisticated networks in linguistics and pedagogy but not in the business workforce. Another challenge of interviewing business managers is related to confidentiality in the workplace.

<b>Researcher</b>	<b>Year</b>	<b>Emphases in Needs Analysis</b>
Swales	1971	First discussion of learner needs for science writing
Wilkins	1976	Notional syllabuses
Munby	1978	Applying target situations as units of NA
Swales	1985	Raising awareness of NA
Hutchinson & Waters	1987	A learner-centred approach incorporating attention to affective factors
West	1994	Advocating NA as an important tool for teachers and curriculum planners
Dudley-Evans & St. John	1998	Advocating multiple-disciplinary NA
		Cross-disciplinary cooperation for ESP NA and teaching and learning
Long	2005	Applying multiple sources and multiple methods
		Workforce-inclusive
		Expansion of NA Consideration of Learning background

**Table 2.1 the emphases of existing NA**

The research by Huang (1997) and Su (2005) was conducted more than ten more years ago, so there is a need to follow up their investigation of English language needs for engineers and business people in Taiwan. Whilst Spence and Liu's (2013) research was

conducted recently and applied qualitative methods, their research did not include educational settings. Likewise, Tsou and Chen's (2013) investigation was a recent study, however student data was gathered via a survey and the target context was a university, rather than both the university and the workforce. As such, there is a crucial need for research that analyses language requirements in both academic and occupational settings, in order to inform ESP teaching and learning. My research seeks to fill this gap in the existing literature by investigating both pedagogical and occupational settings using qualitative methodology to inform ESP education through rich data concerning the linguistic needs of engineers and business people in Taiwan.

This review of existing literature regarding ESP has also revealed the current emphasis on teacher perceptions (see Chia et al., 1999; Huang, 1997; Tsao et al., 2008; Tsou & Chen, 2013; Wang & Liao, 2012; Yang, 2006). These studies provide a broad overview of teacher perceptions regarding the importance and also the difficulties of encouraging greater communicative competence amongst EE and BE students. In order to complement these existing studies, my research will focus on student and employee perceptions.

This chapter has revealed that most existing studies do not incorporate interviews with current university students and graduates about their learning experiences and outcomes (see Table 2.2). I also note a lack of focus on the inter-relationship among main language tasks and skills in the workforce. Accordingly, I will investigate current university students and graduates to understand their perceptions of language needs, and investigate leader and non-leader employees in the engineering and business

workforce to produce a taxonomy of language requirements for the BE and EE workplaces. As Nelson (2000) states, the core concept of ESP is to identify learner needs in order to design a course to meet these needs. Surprisingly, the research regarding Needs Analysis for Taiwanese ESP learners seldom covers both university and workforce contexts. I argue that without an adequate Needs Analysis, it is doubtful that the current BE and EE curricula could meet learner needs. Further, many curricula omissions may result from a lack of collaboration between educators and experts in the profession; two groups that may have varying ideas about learner needs.

Further, the majority of existing needs analyses in BE education focus on investigating current students' experiences (Chen & Wu, 2010; Dudley-Evens & Green, 2007; Fuertes-Olivera & Gómez-Martínez, 2002; Wang, 2004). These learners may have limited knowledge of language use in the workforce. To avoid neglecting the workplace context, the focus of Needs Analysis has shifted from school-based to workplace settings since the middle 2000s (Cowling, 2007; Kaewpet, 2009; Long, 2005; Spence & Liu, 2013). I will continue in this direction with my study.

The inclusion of the workplace in ESP needs analysis is associated with the emphasis on authenticity in language use. In order to evaluate whether current university ESP curricula is preparing students for the linguistic realities of the workplace, I will first discover the features of authentic language use in the professional domain and then assess whether these are addressed in ESP curricular in Taiwan. In order to complement existing needs analyses, which list concrete skills rather than providing a taxonomy of use, I will apply qualitative methods. This will allow me to obtain a deeper

understanding of learner perceptions regarding their ESP learning experiences in the university and a comprehensive picture of the complex and interrelated tasks and functions required by business and engineering employees in the workforce. Chapter three will provide further details regarding my chosen methodology and the instruments employed for data collection and analysis.

Year			Findings
1992	<b>Author</b>	Tsui	<ol style="list-style-type: none"> <li>1. Main findings: manual and report reading skills were most frequently used</li> <li>2. Implications: found a need for in-service English learning about listening, speaking and international communication</li> <li>3. Weaknesses:               <ol style="list-style-type: none"> <li>a. Only 6 references were reviewed in the research. The language skills were assumed from limited sources</li> <li>b. Lack of qualitative methods to explore the taxonomy of language use</li> </ol> </li> </ol>
	<b>Setting</b>	22 engineering companies	
	<b>Source</b>	1001 engineers	
	<b>Approach</b>	Quantitative	
	<b>Method</b>	Questionnaire	
	<b>Area</b>	EE	
1997	<b>Author</b>	S. Huang	Strengths: <ol style="list-style-type: none"> <li>1. Not merely investigating teachers or learners but also coordinators of English education</li> <li>2. Participants included English and Non-English departments</li> </ol> Findings: <ol style="list-style-type: none"> <li>1. English teachers and coordinators had little interest in developing ESP</li> <li>2. Coordinators pointed out difficulties of providing ESP teacher training</li> <li>3. Coordinators suggested that ESP could be managed by subject departments not English departments</li> </ol>
	<b>Setting</b>	17 universities	
	<b>Source</b>	English coordinators	
		English teachers	
		Subject teachers	
		Graduates	
		Freshmen	
	<b>Approach</b>	Quantitative	
<b>Method</b>	Questionnaire		
<b>Area</b>	ESP		
1999	<b>author</b>	Chia, Johnson, Chia, Olive	<ol style="list-style-type: none"> <li>1. A pioneering NA in Taiwan, investigating medical disciplines</li> <li>2. Students perceived listening and speaking</li> </ol>

	<b>Setting</b>	University	to be their weakest skills 3. Students required to take a minimum of one year of ESP courses
	<b>Source</b>	Students	
	<b>Approach</b>	Quantitative	
	<b>Method</b>	Questionnaire	
	<b>Area</b>	Medical English	
2006	<b>author</b>	Yang	1. The first NA to investigate Taiwanese doctoral students 2. Reading and writing skills were identified as important for doctoral students, but listening and speaking skills were only used occasionally 3. Most students wanted to improve their listening and speaking skills
	<b>setting</b>	university	
	<b>source</b>	Students and teachers	
	<b>approach</b>	quantitative	
	<b>method</b>	questionnaire	
2008	<b>author</b>	Tsao, Wei, Fang	1. Students are more interested in ESP than teachers 2. Both students and teachers suggested EGP should be a prerequisite when enrolling in ESP courses 3. Both students and teachers suggested ESP requires specific materials and training 4. Recommendation that ESP teachers be experts in subject specialization (e.g. business, engineering or nursing) 5. Potential problems included lack of adequate ESP teachers, limited hours, little use of English in daily life, and overuse of grammar translation methods
	<b>setting</b>	university	
	<b>source</b>	2 <sup>nd</sup> year students and teachers	
	<b>approach</b>	quantitative	
	<b>method</b>	questionnaire	
2010	<b>author</b>	Chern	Findings: 1. It is rare for Taiwanese teachers to conduct NA for ESP students 2. It is rare for ESP teachers to be specialists in the professional area but were linguistic or literature experts 3. Most universities provided English education for one year throughout students' university education 4. Students described English learning in universities as stressful 5. There is little oral language practice in class
	<b>setting</b>	university	
	<b>source</b>	literature review and heads of school	
	<b>approach</b>	qualitative	
	<b>method</b>	1.interviewed head teachers 2. reviewed English language curricula from	

		websites of 60 Taiwanese universities	
	<b>area</b>	GE and ESP	
2012	<b>author</b>	Wang, Liao	<ol style="list-style-type: none"> <li>1. For vocational or technical university students in Taiwan, the levels of proficiency were usually lower than non-vocational university ones.</li> <li>2. The qualification of General English Proficiency Test (GEPT) has been set up as criterion for graduation, but the majority of vocational university students are anxious to prepare for it.</li> <li>3. Taiwanese students had little opportunities to use English in daily life.</li> </ol>
	<b>setting</b>	university	
	<b>source</b>	students	
	<b>approach</b>	quantitative	
	<b>method</b>	questionnaire	
	<b>area</b>	GE	
2013	<b>author</b>	Tsou Kao	<ol style="list-style-type: none"> <li>1. NA was conducted in 2007 and was updated for five years</li> <li>2. Learning needs: learning tasks for academic, defining a term or explaining a problem, describing processes &amp; introducing charts</li> <li>3. Application NA on ESP design, including textbook design: 30% content knowledge of subjects and 70% language</li> <li>4. ESP teachers esteemed that the opinions of subject professors as valuable in term of NA and material design</li> <li>5. Strength: conducting NA by investigating students, English teachers, ELT prof. and subject prof.</li> <li>6. Limitation: <ol style="list-style-type: none"> <li>a. The participants of survey were 2<sup>nd</sup> year students who have less study experience than the 4<sup>th</sup> year students.</li> <li>b. A deep understanding of students' needs is more likely to be explored by interviewing, instead of survey</li> </ol> </li> </ol>
	<b>setting</b>	a university	
	<b>source</b>	2 <sup>nd</sup> yr students English teachers subject prof.	
	<b>approach</b>	quantitative, qualitative	
	<b>method</b>	Surveyed students & professors Interviewed ESP teachers and subject professors	
	<b>area</b>	ESP	
2013	<b>author</b>	Spence, Liu	<ol style="list-style-type: none"> <li>1. Strengths: <ol style="list-style-type: none"> <li>a. A pioneering NA to interview Taiwanese workforce</li> </ol> </li> </ol>
	<b>setting</b>	A company	

<b>source</b>	employees	b. Application of both qualitative and quantitative methods  2. Findings: a. Needs to learn the overlap between EE and BE, such as presentation skills and conference calls b. Needs to learn engineering-genre writing c. Concerns of difficulties of communication for EFL learners. d. Intercultural training is needed.  3. Weaknesses: a. Without investigating business workplace, the overlap of EE and BE cannot be explicitly explored. b. Findings were a list of tasks, not a taxonomy of language use
<b>approach</b>	quantitative, qualitative	
<b>method</b>	interview, observation, online survey	
<b>area</b>	EE	

**Table 2.2 A summary of existing NA in ESP for Taiwanese learners**

## **Chapter Three**

### **Research Methodology**

This chapter describes the study's research methodology, which is designed to allow for a university and workforce inclusive project that takes into account the opinions of stakeholders in pedagogical and occupational settings. The methodological design is presented along with support from related theory. The chapter will also discuss the rationale for the sample population selection and instruments for data collection, with particular reference to the decision to utilise in-depth interviewing. The process of analysing data using NVivo 10 to extrapolate key themes from the interviews as well as the techniques of transcription, coding, and triangulation are also discussed in terms of research validity. In the last section of this chapter, I discuss ethical considerations related to this study.

#### **3.1 A Participatory Approach with Qualitative Methodology**

A main feature of this research – and a characteristic that ensures its originality in a Taiwanese context – is that it involves a wide range of participants in both academic and professional settings. As discussed in chapter two, a number of researchers have investigated the needs and difficulties of Taiwanese EFL learners (Chia, Johnson, Chia, & Olive, 1999; Huang & Liu, 2000). These studies have provided valuable information about gaps in language learner proficiency, the development of learning strategies,

and ways of meeting student goals. However, the university, rather than the workplace, is the main context for existing research on ESP in Taiwan with few researchers surveying language needs in the workplace. I argue that this failure to attend to the linguistic and socio-cultural needs of language users in vocational settings results in inadequate needs analysis for ESP courses.

As such, I have adopted a Participatory Approach as my research framework. This approach emphasizes ‘conducting the research process with those people whose life-world and meaningful actions are under study’ (Bergold & Thomas, p.NA). My research design emphasizes flexibility in order to provide every possible opportunity for participants to voice their lived experiences freely. This is in direct response to the limitations of some existing studies in which predetermined categories of language functions were utilized. I seek to broaden rather than constrain the understanding of target domain needs for engineering and business workplaces and provide a forum for learners and professionals to voice their opinions and therefore to influence research in the field of ESP.

As discussed in chapter two, ground-breaking research by Spence and Liu (2013) – one of the few investigations of the workforce as a means of understanding ESP learner needs – applied both qualitative and quantitative methods. However, the majority of existing research on Taiwanese ESP education applies quantitative approaches rather than qualitative approaches to the collection and analysis of data. Accordingly, I have

elected to adopt a qualitative methodology. As Kawulich (2005) states, qualitative approaches enable researchers to explore the intentions and behaviours behind the messages stated by participants in research. Moreover, qualitative approaches can enhance both the depth of data collected and the richness of the interpretation (DeWalt & DeWalt, 2002; Kawulich, 2005). I appreciate the contribution of existing needs analyses that have surveyed large groups of students. However, data from my semi-structured student interviews will complement existing findings and provide a more in-depth understanding of student perceptions.

In order to examine perceptions of linguistic needs regarding communicative competence, I will interview first year students, fourth year students, engineers and business employees. I will compare language users at four stages: first year study, fourth year study, novice employment, and leadership levels of employment. Another original element to my study is the examination of multiple sources and contexts: university students, engineers, and business employees.

There are advantages and disadvantages for the adoption of qualitative and quantitative methods respectively (Tierney & Dilley, 2001). Quantitative methods can gather opinions from large-scale populations but data may lack depth. Research utilizing qualitative methods can allow the research to obtain a deeper understanding of each participant's perception but will be necessarily restricted in population size.

In terms of multiple sources for informing ESP educational reform in Taiwan, teachers, administrators and policy makers have been interviewed in other studies (see Chern, 2010; Chia et al., 1999; Huang, 1997; Su, 2005; Tsao, Wei, & Fang, 2008). The importance of interviewing policy makers and teachers has also been raised by Tierney and Dilley (2001, p.459) who argue that teachers, administrators, and policy makers are 'in the know' and can provide beneficial information. Several educators in Taiwan have surveyed and interviewed teachers and policy makers (see Chern, 2010; Chia et al., 1999; Huang, 1997; Su, 2005; Tsao et al., 2008; Tsou & Chen, 2013). In addition, several researchers have augmented studies of teachers and policy makers by also surveying students (see Chern, 2010; Chia et al., 1999; Huang, 1997; Su, 2005; Tsao et al., 2008; Tsou & Chen, 2013; Wang & Liao, 2012; Yang, 2006). Nonetheless, needs analysis through the application of questionnaires and surveys is unlikely to elicit in-depth data. Therefore, my research will emphasize the importance of listening to participants and providing opportunities for rich and meaningful input at the level of the individual.

Further, whilst Taiwanese ESP research has utilized multiple sources (Chern, 2010; Chia et al., 1999; Huang, 1997; Su, 2005; Tsao et al., 2008; Tsou & Chen, 2013; Wang & Liao, 2012; Yang, 2006), the sources have been focused on universities. As shown in chapter two, NA research in other national contexts recognizes the value of multiple sources, including the professional domain (Cascio, 1994; Fixman, 1990; Jabbarifar & Elhambakhsh, 2012; Kassim & Ali, 2010), multiple methods (Evans, 2013; Kaewpet,

2009), or multiple sources and methods (Cowling, 2007; Swales, Barks, Ostermann, & Simpson, 2001).

However, it is not always possible for researchers to access multiple sources. This may explain why the majority of researchers in specific professions, such as engineering or business, do not investigate the pedagogical setting when conducting research into ESP education. Kaewpet's (2009) research provides one exception to this trend by analyzing the communicative needs of engineering students and civil engineers. Perhaps Kaewpet's (2009) role as a university professor augmented his background in the engineering industry, thus providing sufficient access to both the pedagogical and professional contexts.

Similarly, my own background in the engineering and business industries combined with my position as a university lecturer, allows me to undertake research into both the professional and pedagogical contexts in Taiwan. In order to provide a holistic picture of language needs for university students, this research integrates a university-based NA and a workforce-based NA to investigate both educational and occupational settings. As an experienced EE and BE instructor for engineering and business employees, I have the necessary specialist knowledge to confidently discuss ESP education with students and professionals in these fields.

### **3.2 Methodology Design**

According to the literature review in chapter two, there is not only a requirement to conduct needs analysis in both academic and occupational settings, but also a need to adopt qualitative approaches. A number of researchers have utilized interviews to gather data (see Chern, 2010; Huang, 1997; Jackson, 2005; Kaewpet, 2009; Su, 2005). Observations have also been applied worldwide (see Baghcheghi, Koohestani, & Rezaei, 2011) but are not commonly used in Taiwanese research. Spence and Liu's (2013) research is a key exception. They interviewed and observed a leading engineering company in Taiwan in order to identify key language tasks in the workplace (Spence & Liu, 2013). However the scale of Spence and Liu's (2013) research was limited with only two conference meetings observed.

Workplace observations are not always feasible due to issues of confidentiality. To compensate for the difficulties in accessing the workplaces I sought to study, I chose to use semi-structured interviews, which can provide access to rich data without requiring a physical presence in the workplace. Another important reason to utilize interviews instead of observations is that utilizing observations for research has been likened to watching silent movies; the researchers are frequently unable to ask for further explanation or elaboration from the participants (Glesne & Peshkin, 1992).

### **Semi-Structured Interviews**

In terms of ensuring successful interviews, Padgett (2008) advocates the importance of selecting an appropriate setting and undertaking careful preparation. I scheduled each interview in advance, selecting a public but quiet location conducive to trust and candour. One of my chief priorities was to establish a strong rapport with the research participants in order to encourage rich and productive interviews. As my underlying aim for the interviews was to ascertain the social context within which English was used in the university and business environments, I was concerned with facilitating expansive exchange and rich discussion of context (Dillman, 2000; Goyder, 1987).

Another key priority for my research design was to include learners and employees as stakeholders of ESP curricula. Accordingly, I focused on ensuring each interview provided multiple opportunities for the participant to consider their own needs, to voice their experiences and opinions, and to feel empowered to shape the future of ESP education in Taiwan. This is directly related to my concern for providing a forum for participants to voice their lived experiences with ESP education and the use of English as a foreign language in the workplace.

As stated previously, my research applies one on one, face to face, in-depth and semi-structured interviews because spontaneous responses of interviewees are likely to bring up unexpected issues which ready-made questions in surveys are unable to discover (Liebow, 1993). To avoid leading participants' responses, I designed the interview questions as semi-structured and open-ended, thus encouraging

interviewees to express their opinions rather than to merely show agreement or disagreement with pre-assumed questions. Another reason for the use of the open-ended interview technique was that interviewees were likely to feel free to share their specific anecdotes, which are not able to be readily expressed via surveys but may convey specific needs with regards to language learning.

Two weeks before the interviews, potential participants were provided with consent letters and informed of the prompt questions for the interview. If the individual agreed to be interviewed, he or she would complete the consent letter and preview the interview questions, then send the completed consent letter to me by email. Each participant was interviewed once and each interview lasted for approximately 40 minutes. Therefore, my research generated 1,600 minutes of voiced opinions regarding ESP in Taiwan.

### **Rationale for Sampling**

In order to answer the research questions, participants were chosen from four stages – the first year students, the fourth year students, non-leader employees and leader employees. The rationale for selecting these groups was based on the desire to compare how English language needs may evolve throughout the course of tertiary study and professional employment. The settings involved one leading national university, five leading semi-conductor manufacturing companies, and five

international business firms. Two sub-areas of ESP were chosen for investigation – Engineering English (EE) and Business English (BE).

The purpose for assessing the needs of first year students was to explore their learning background and examine specific perceptions of needs following school education and in the first year of tertiary study. The rationale for the investigation of the second stagers – senior students – was to look at the process and context of ESP learning in the university setting. As fourth year students have been studying at university for almost four years, they are usually able to provide rich feedback on their experiences in the ESP classroom and have fresh memories of these experiences.

Next, non-leader employees – the third stagers – were included in this study as they have the potential to provide important information about the fundamental tasks and responsibilities they carry out as part of their professional lives. Their perceptions of language needs are a reflection of the skills and proficiencies required to survive in the workforce at the entry/mid level of employment. To date, there has been no research dedicated to investigating newly recruited employees in Taiwanese industries, so I intend to compensate for this lack of systematic investigation by including junior employees in this research.

In addition, leaders in the workplace – the users of English as a Foreign Language at the fourth stage – were included to show the linguistic and socio-cultural demands on

senior level employees and the multiple tasks and advanced communicative competence required. Senior level employees also have the authority to determine the criteria for recruiting new staff members and promoting existing staff members. As such, the leader employees' opinions regarding communicative competence requirements for the workplace can provide valuable information for how ESP education can prepare graduates for entering their chosen profession.

Hence, language users at four stages of their careers were investigated. Participants included 10 first year students, 10 fourth year students, 10 non-leader employees, and 10 leader employees. In total, the research involved twenty participants from a national Taiwanese university and ten participants from five private firms in business industries and ten participants from five private firms in engineering industries.

Both the first and fourth year student participants were enrolled for study at the same national university. This allowed for an exploration of how student attitudes may vary at the beginning and the end of the same degree and at the same institution. The first 10 students to respond to my advertisement were selected to participate in the interviews. A national university was chosen as the criteria for entering Taiwanese national universities is higher than the standard for entering private universities (Commission of Student Distribution for Taiwanese University, 2011; Ministry of Education, 2012, 2013a, 2014). Accordingly, students in private universities are also likely to encounter the difficulties identified by national university students.

The first year students' interview covered the main issues associated with the research aims: experiences with English education in high school, the specific language skills addressed in the school classroom, preferences regarding teaching style, and expectations regarding English language learning education in universities. The interview questions for the first stage participants are provided in Appendix 3A.

The interview for the fourth year students aimed to elicit their reflections on language learning and teaching in the tertiary context. The intention was to consider the issues confronting students as they made the transition between English language studies at university and 'real world' language use in the workplace. The interview questions for the fourth year students are provided in Appendix 3B.

The recruitment of employee participants took approximately eight months. I initially sent out more than two hundred e-mails to engineering and business companies in Taiwan, inviting them to participate in the study. These companies were randomly selected from the list of companies in Taiwan provided by the Ministry of Economic Affairs (2011). The first 10 non-leader employees and 10 leader employees to respond to the email were accepted as participants. These employees were employed in 5 different companies in two areas of Taiwan.

The interviews for the entry-level and senior level employees aimed to compare perceptions of language needs at these two stages. Further, the interviews with the senior employees were aimed at identifying leader perceptions of graduate students' English language abilities, and the significance of English language ability for assigning responsibilities and recruitment of new employees. The interview questions for the employees are included in Appendix 3C and 3D.

I interviewed each participant for 40 minutes and recorded the sessions. This number of interviews allowed me to elicit rich, in-depth data whilst remaining manageable for completion of the study in the timeframe and with the available resources. The sample size of 40 participants allowed for four different groups to be examined in sufficient scope to explore the complexities of language in the university and workplace. The possibility of gaining an in-depth representation of the target context declines when the sample size becomes unreasonably large (Creswell, 2008). As mentioned earlier in this chapter, having a sample size of 40 participants allows for a rich description of language use, and the inclusion of ten participants from each stage provides a representative insight into each group.

### **The Interviewing Method**

As previously stated, questionnaires may limit the researcher's ability to access important themes pertaining to the topic. As such, I have chosen to elicit data via

open-ended interviews with scope for rich interaction between the interviewee and interviewer. The option to utilise interviews as the method for data collection was also influenced by socio-cultural considerations. In the context of Taiwanese culture, face-to-face communication is the most sincere and effective way to facilitate meaningful interaction.

Taiwanese people tend to be more talkative when they meet people face-to-face, but tend to give short replies when they are interviewed on the phone. An important Taiwanese proverb – '*Gae-Mein-Zi*' – roughly translates to mean: 'to give support to the one who has face-to-face communication'. In Taiwan, face-to-face interviewing is more likely to gain richer results than the use of questionnaires. Participants can simply tick boxes on questionnaires without thinking critically and carefully about the content. In contrast, if properly managed, the interaction between interviewer and interviewee can encourage careful consideration and elicit deep reflection.

Accordingly, successful interviewing requires cultural knowledge and an understanding of appropriate social conventions. The interaction between interviewer and interviewee requires friendliness, the avoidance of taboo subjects, and sensitivity regarding matters of face and social status (Odendahl & Shaw, 2001). For example, depending on the cultural context, it may be impolite to start an interview by asking a female employee's age or requesting the interviewee to provide an appraisal of his or her own strengths and weaknesses in English.

In contrast, a resourceful interviewer can congratulate the interviewee on a job promotion or on a positive aspect of the interviewee's organization. For example, an interviewer can start a conversation with 'congratulations on your promotion!' or 'congratulations on the outstanding revenues of your company!' to break the ice. This establishment of rapport is likely to encourage more expansive responses during the remainder of the interview.

Another socio-cultural issue relates to confidentiality when interviewing senior employees and asking supervisors to evaluate the language proficiency of their subordinates. This enquiry could cause offence or a loss of face if the senior employees are not satisfied with their subordinates. Beforehand, the interviewer has to emphasize that the contents of the interview will remain confidential and names of interviewees and their institutions will be anonymous throughout the process of research and in any related publications.

### **In-depth Interviewing**

As was discussed in chapter two, little existing research into ESP education in Taiwan has utilised interviews as an instrument for data collection (Chern, 2010; Spence & Liu, 2013). Further, little research has investigated both the workforce and the university

contexts in Taiwan. With these considerations, this research emphasizes the significance of learners' and employees' perceptions of language needs via in-depth interviewing.

In-depth interviewing has been described as 'the art of hearing data' as it involves the skills to elicit deep information through the interaction between interviewer and interviewee (Rubin & Rubin, 1995, p.1). The interaction also involves clarifying the meaning of questions and confirming the meaning of interviewees' responses. For example, an interviewer sometimes rephrases the research questions to enhance clarity for interviewees. Further, the interviewer must always summarize the main ideas contained in the interviewee's responses in order to confirm if the understanding is correct (Johnson, 1972, 1980a).

There are various interview formats, including unstructured, structured, and semi-structured instruments (Moyser & Wagstaffe, 1987b). A semi-structured instrument is considered an appropriate tool for this research as the study is seeking a deeper understanding of issues raised by participants. When interviewees have further suggestions not mentioned in the interview guide but of significance to the topic of enhancing ESP education, the interviewer can elicit elaboration or deeper discussion.

### **Pilot Study**

Following the identification of prominent issues in existing ESP research, I integrated these themes into a questionnaire. I also included several open-ended questions to attain feedback on the instrument itself. As such, this questionnaire served as a quasi-pilot study to confirm the suitability of my interview questions. As this was a trial study, the questionnaire was sent out to a small sample of 10 engineers and business employees randomly selected from a list of firms in Taiwan provided by the Ministry of Economic Affairs (2011). There was a 100% response rate and the major finding to emerge was that the interview questions needed to be more specific to each group of participants in order to cater to the meta-linguistic knowledge and language experience of each group. For example, the questions for first year students needed to be more carefully structured and explained in order to assist the interviewee to understand the type of information being sought. Likewise, specific questions pertaining to leader employee duties needed to be added to the semi-structured questions for senior employees in order to provide an opportunity for this group to express their unique language needs.

After refining my questions according to the feedback from the pilot questionnaire, a series of preliminary interviews were conducted as a pilot study to trial the instrument. Several engineering and business employees from the quasi-pilot stage of the project agreed to participate in these pilot interviews. Their input provided useful feedback concerning the interview content and protocol and allowed me to refine the wording of questions in order to achieve greater clarity and politeness. For example, I changed

one of the questions from ‘Do you have any language difficulties in the workplace?’ to ‘Could you please list the new language challenges faced by graduates in 21st century workplace?’ This change rendered the question more indirect and therefore less threatening to the interviewee’s face.

### **The Interview Process**

Scheduling interviews with senior employees and leaders of industry is labor-intensive, typically requiring multiple telephone calls with personal assistants or other gatekeepers. It is time consuming and often problematic to work in with senior professionals’ schedules. Nevertheless, as stated above, I prefer not to interview on the telephone because in person communication is valued more highly in Taiwan. Further, the interviewee’s paralinguistics – facial expression and gestures – provide important cues for timing the interview and asking for explanations or avoiding sensitive topics. Before the date of the interview, I emailed each participant about the interview purposes and gave them a copy of the prompt questions. Regardless of whether they had read this information, I spent one minute at the start of each interview explaining the purposes of my research and key questions before I started to interview. I asked each interviewee for permission to record the content of the interview and all of them agreed.

As one of the main intentions of this qualitative research is to identify the participants' perceived language needs, voice recording was an ideal tool to allow me to review every word uttered by the participants. When an interviewee emphasized or repeated specific issues, I encouraged further description. Also, at the end of each interview, I summarized the key points raised by the interviewee in order to confirm that I had interpreted the responses correctly. Fortunately, all interviewees including students and employers were keen to express their opinions regarding ESP education. Before interviewing, I explained to the interviewees that they were free to use English, Mandarin, and/or the Taiwanese dialect (Tai-Yu) to express their opinions.

### **Elicitation Techniques**

The techniques used for elicitation will depend on the background of the interviewee. For example, in this research, four stages of language users were interviewed and I applied varied techniques for maximizing the elicitation of data from each group. Student participants did not have the metalinguistic or metacognitive knowledge to reflect critically on their own needs and proficiencies. As such, I provided them with specific examples to help them understand the questions and scaffold their exploration of their own learning experiences. Likewise, as students had little professional experience, they tended to express limited opinions regarding language use in the workplace and required assistance to consider these issues. In contrast, leader employees were experienced language users in the workforce and the majority

of participants from this group could provide comprehensive and in-depth responses without hesitation.

The semi-structured format allowed me to explore important points raised by interviewees. For example, when a participant said “*Good English is very important*”, I would ask for further illustration or explanation by using the wording, ‘*good English*’. I would ask a follow-up question such as “*could you give an example to illustrate the importance of good English?*” In addition, when an interviewee showed interest in having a deeper discussion about a successful experience or specific difficulties regarding language use, I would ask for details of the experience. I ensured that I did not interrupt the conversational flow but took notes as a reminder to ask follow up questions. On the other hand, if the interviewee stopped talking perhaps due to embarrassment regarding a demotion, I would move on the next issue without further questioning. I did not control the conversation but encouraged interviewees to illustrate deeper opinions by asking for details or examples (Padgett, 2008).

### **3.3 Data Analysis**

NVivo 10 software was applied to analyse the interview data. To prepare for data analysis, the vocal content of interviewing was transcribed to a written form and was stored in NVivo 10. The data from each participant was categorized into six groups: the

first year students, the fourth year students, non-leader engineers, leader-engineers, non-leader business employees and leader business employees.

### **Transcription Technique**

The verbal data was transcribed into forty thousand words in English, which presented a rich overview of ESP learning experiences and language needs in the engineering and business workplaces. Inadequate transcription or data analysis can impinge on the validity of research. Accordingly, several strategies were applied to maximize the quality of transcription.

Firstly, as mentioned above, I summarized and confirmed the interviewees' main ideas at the end of each sub-question. Quotes from this data are provided verbatim – i.e. with grammatical inaccuracies if these were present in the original text. As such, a key part of the transcription from verbal data to written text was to note instances of code switching, abbreviation and slang. My participants sometimes spoke both English and Chinese during interviewing. I transcribed the participants' responses into written English texts in order to establish a database for analysis by NVivo. I kept the intention and meaning of the Chinese utterances and expressed this in the syntactical order of English.

### **Coding**

As Atkinson and Heritage (1984) and Poland (2001) advise, the intonation, overlaps, and repetition in participants' input can be important sources of information. During the process of interviewing, I recorded overlapping words and the main issues of each interview with hand-written notes. In the last few minutes of interviewing, I confirmed the accuracy of my notes with each participant in order to verify that the main issues I had summarized were consistent with the issues that each interviewee intended to raise. Therefore, the last paragraph of the transcription for each interview presented the main ideas of each participant's opinions. The summarized issues provided a rough guide for me to code the data.

With the NVivo software, I coded key words, repetition, metaphors and analogies from the raw data. As D'Andrade (1995, p.294) emphasizes, 'perhaps the simplest and most direct indication of schematic organization in naturalistic discourse is the repetition of associative linkages'. The engineer interviewees repeatedly used the term 'problem-solving'. Accordingly, I used two of the functions of NVivo 10, auto-coding and coding, to gather similar terms and phrases associated with 'problem-solving'. A free node called 'problem-solving' was accordingly established.

Secondly, I compared large chunks of text to examine what was stressed by some groups but ignored by other groups. For example, 'communicative needs for job promotion' were repeatedly mentioned in interviews with engineer and business

employees but seldom mentioned by student participants. I recorded my first critical opinions on each discrepancy of data by using the function, *Memo*.

Thirdly, I analyzed the linguistic features of each text, including metaphors and transitions. The metaphors and comparisons, such as the description of a class as being 'like learning dumb English', were also sorted as free nodes. My opinions about these metaphors were also recorded with *Memos*.

Finally, I reviewed the unsorted texts and reconsidered their implications and sorted them into existing or new nodes. Again, I took *Memos* to record my interpretations of this data. By using the function of *Tree Nodes*, I linked the relationship among free nodes and established hierarchies of nodes. For example, 'daily routine tasks' was established as a tree node with a hierarchy, which includes several subordinate nodes, such as reading engineering manuals and writing daily reports.

### **Constant Comparison Method**

Analogous to the method of triangulation, this research analyzed data from four groups of language users. As highlighted by Odendahl and Shaw (2001), incorporating data from different participant groups can provide multiple aspects on a particular

issue or topic and increases the validity of the research. For example, the opinions of leaders of industry are very valuable but tend to be top-down; whereas, entry level employees tend to provide useful bottom-up information (Odendahl & Shaw, 2001).

Glazer and Strauss (1967) have advocated the 'constant comparison method' to explore line-by-line analysis of text rather than categorizing data into pre-assumed theoretical structures. I compared and contrasted data from different sources as I intended to analyze the data through the following key questions provided by Glaser and Strauss (1967). I reflect on my data and ask myself: 'What in this data surprises me?', 'What key words were most frequently used by some groups but seldom mentioned by other groups?', and 'How and why does the data differ among groups?' I compared what was said and what was not said among the groups of participants. For example, I contemplated the reasons that 'problem-solving' was repeated frequently by engineers but less frequently by business employees.

### **Ethical Issues**

It was expected that five engineering and five business companies would consent to participate in this research. In the invitation letters, a brief description of the study intentions and procedure was provided. Also, full identification of my identity and the sponsoring organization, including an address and a telephone number for future contact were provided. I emphasised that participation in the study was voluntary and

the respondent had the right to withdraw at any time without penalty or loss. I assured all potential participants of the strict confidentiality of the study. All participants involved in this research were adults, and there was no involvement with vulnerable populations. Consent to participate in the interviews was obtained directly from each interviewee instead of a guardian, or parent.

In terms of confidentiality and privacy, the names of all participants and the names of participants' institutes have been coded with numbers. I ensured that the identities of participants would never be revealed or linked to the information they provided. My data will be destroyed after five years to protect participant privacy.

This research involved self-appraisal of communicative competence and evaluation of colleagues' competence, so it is ethical to maintain the strictest of confidentiality concerning participants and institutions. To avoid identifying specific features, this research does not provide details of population or ages of institutions. My research has been approved by the ethical committee of University of Newcastle and assigned the approval number H-2011-0283.

## **Chapter Four**

### **English as a Foreign Language in the Engineering and Business**

#### **Workplaces in Taiwan**

As discussed in chapter one, a major intention of this research is to develop a 'taxonomy' of language use in the engineering and business workplaces. Such a taxonomy will allow for an explicit identification of the interrelationship between the knowledge and skills required for English use in the professional domain. Rather than simply listing language uses or skills, a taxonomy allows for the visual representation of the interrelationships and overlaps between each skill and task in a more complex form of classification.

This taxonomy has emerged from the detailed and systematic analysis of data from the interviews with each group of participants but particularly the entry/mid level and leader employees in the engineering and business industries. As described in chapter three, key issues in the interview texts were identified using two criteria: the frequency of repeated phrases and the degree of importance assigned to the issue by participants. These issues were sorted into nodes using NVivo 10. This allowed for the identification of key themes within the data and their relationship with associated issues.

The analysis and categorization of linguistic and pragmatic skills required by engineers and business people in Taiwan revealed six categories: routine tasks, Team-Oriented-Problem-Solving (TOPS), negotiation skills, soft skills, hard skills, and Intercultural Communicative Competence (ICC). According to the interview participants, these six categories represent the main requirements for staff in the engineering and business workplaces. These key requirements involve complex uses of English, metalinguistic knowledge, and control of a variety of text types. This chapter will examine each of these categories of requirements and consider their implications for the preparation of ESP students entering the engineering and business professions. There will also be a discussion of recruitment criteria and English language proficiency and a summary of the major findings presented in this chapter.

The stage three and four participants were able to identify the English language skills required for employment in the engineering and business workplaces in Taiwan in far greater detail than the first and second stagers. For example, the first and second stagers discussed English language use in general terms – e.g. ‘for communication’ or ‘for employment’ whilst the third and fourth stagers articulated specific linguistic and pragmatic requirements relevant to their employment. This is perhaps predictable given that students have little exposure to the workplace.

However what was surprising was the degree of uncertainty that characterised the stage one and two groups’ responses regarding the workplace uses of English. This has important implications for understanding the degree to which ESP courses at

university are currently preparing graduates for the workplace. This important implication will be explored further in Chapter five, where I will consider whether the target domain uses of English are addressed in ESP curricular and if so, why students are not able to articulate these skills clearly, and if not, whether this is due to teachers' lack of subject specialist knowledge or another key factor such as student perceptions.

#### **4.1 The Use of English in Routine Tasks: Engineering and Business Employees**

This section will discuss the data concerning the routine tasks of engineers and business employees. Throughout the discussion, I will compare the entry and mid-level employee responses with the leader employees' feedback. By looking at the data regarding routine tasks, some other key uses of English in the workplace will be identified; for example, daily tasks for engineers include manual reading in order to solve problems. The skills of manual reading overlap with skills for problem solving, which is another major use of English in the workplace.

##### **The Routine Tasks of Engineers**

According to the data gathered through in-depth interviews with five non-leader and five leader employees, engineers participate in a range of routine tasks that require specific English language skills. These routine tasks may be categorized as relating to quality control, record keeping, and professional development. Each of these routine tasks involves a sub-set of tasks such as email writing and reading, telephone calls and

conference calls, and face-to-face meetings. In turn, these sub-tasks require particular English language skills. According to the data, leader and non-leader employees had similar tasks however these differed in scope, with the leader engineers having more responsibility.

The engineering participants were from their company's mechanics department and advised that most tasks involved in quality control are associated with machine-related problems and require the use of specialized English. In the factory, engineers are required to read and understand English used on machine control panels to ensure quality products and identify the root causes of any problems. Indeed, engineering employee responsibilities involve resolving problems that could disrupt the operation of machinery in the factory. One engineer participant explained the process of quality control: *'to check on the digital data of machines, and ensure the digital data in a normal value so the quality of products could be controlled. The panels and the manuals of machine are all in English only'*.

According to participants, a key element of quality control in the engineering workplace is keeping accurate and up-to-date records and work journals. In these journals, engineers record vital information about the running of machinery, report on problems and solutions, as well as potential strategies for increasing quality and resolving issues as well as failed attempts to solve the current problem. This keeping of up to date and accurate journals in English means that all engineers can access key information about the machinery, even those who are not from Taiwan. This journal maintenance was a daily task that each engineer had to keep in English for duty take-

over. The completion of this task required an understanding of specialist terms in English as well as knowledge of the report text type, including the necessity for classification, description, and summarizing content, and impersonal objective language and use of the timeless present tense.

At the end of their daily duty, engineering team members including non-leaders and leaders have a meeting to review the daily tasks. As mentioned previously, as a significant proportion of staff is from other countries, Taiwanese engineers usually need to speak English when communicating with colleagues from their own company. From time to time, vendors (machine suppliers) also join these meetings, especially if some serious problems had been encountered. According to interviewees, vendors remain in Taiwan to provide technical support for months or years following the installation of machinery. These vendors may be from the Netherlands, the United States, Japan, or other countries and English is the only language they can use to communicate with Taiwanese colleagues. Staff meetings are therefore conducted in English, frequently requiring international conference calls in order to resolve problems.

These conference calls require formal, professional language and clear statements of problems and possible resolutions. When problems occur with machinery and solutions are urgently required, conference call interactions can be complicated and full of linguistic challenges. For example, as more participants join a conference call, it becomes difficult to keep track of interlocutors. Some engineers will ask questions or give opinions without specifying their name or organization. This makes

communication difficult when other engineers wish to clarify information. In a face-to-face meeting, paralinguistic cues can provide additional support for communication in a foreign language. Further, complex pragmatic knowledge of socio-cultural norms for interrupting, disagreeing without causing offence, and changing the topic of conversation is required.

An engineering leader explained: *'I have to be very tough on con-call. There are team members from different countries, and I have to clearly point the name of staff when I want someone to answer my question. If I did not say the name, it takes lots of time to solve problems. As they cannot see my body language or facial expression, I have to clearly state how important the teamwork is and assign tasks clearly by saying the names of staff and the tasks they have to do.'* Engineering manager number 03 pointed out the need for active participation during conference calls: *'Con-call and writing formal projects are the most important skills for all engineers. Listening skills are the weakest skills for our engineers. Some engineers can't exactly understand what others talk, so they tend to be conserved or passive to respond to others on conference calls.'* Indeed, according to most non-leader and leader engineer interviewees, conference calls (con-calls), and project writing are the most demanding tasks requiring the most sophisticated communicative competence and posing the most difficult English language challenges for engineers.

In addition, these high-pressured conversations feature a range of English accents and dialectal features. Most of the employee participants claimed that they were barely able to comprehend conversations where speakers have various accents. Interviewees

claimed they were more familiar with American accents as the majority of teaching material in Taiwan features American pronunciation. Disappointedly, research participants claimed they were neither confident to talk to Americans nor confident to talk to non-native English speakers, such as Germans.

The major differences between the stage three and stage four engineers' routine responsibilities in the workplace related to the scope of the communication. Leader employees are required to use English to manage large-sized projects including local and international human resource assignments. These communications are conducted in high-pressure situations where the smooth functioning of machines is imperative. In contrast, non-leader engineers are required to perform similar tasks but with less responsibilities than leaders.

Other situations that require the use of English in the engineering workplace involve attending training courses for professional development. Engineers use English as a tool to learn new techniques and to pass on these methods to Taiwanese colleagues. Non-leader engineer 02 advised, *'I often attend training courses to update my knowledge of engineering. SWOT is often used in the courses to compare old and new techniques so I can have good understanding about the properties of the techniques'*.<sup>1</sup> Similarly, leader engineer 05 explained why he applies SWOT in professional presentations: *'When I need to present my proposal regarding innovative techniques, I have to persuade my audience by using SWOT. If I can explicitly demonstrate the*

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<sup>1</sup>SWOT refers to strengths (S), weaknesses (W), opportunities (O) and threats (T), and is a framework for writing in the engineering and business workplaces (Piercy & Giles, 1989).

*strength of new techniques and list the weakness of other ones, I can have chance to let people accept my idea'. Even in Japan, English, not Japanese, is used as the medium of instruction for professional development, as few Taiwanese engineers are proficient in Japanese. Leader engineer interviewees in particular, stressed the need for English as a tool to retrieve new information and professional knowledge.*

### **The Routine Tasks of Business Employees**

Both non-leader and leader business employees perceived routine tasks to include reading and writing e-mails, introducing products to buyers, visiting clients' companies, and negotiating the price of products. Sales manager number 03 advised that the main channels of communication in international business industries: *'involve sending and reading emails, talking via conference calls, telephone calls, or via Skype.'* However, as with the engineer participants, the different responsibilities between non-leader and leader business employees meant that non-leaders were assigned small-scaled tasks within a particular department, such as shipping, marketing or design. In contrast, leader employees were responsible for overseeing the entire operation. Accordingly, language requirements in the business workplace varied depending on employee rank.

Non-leader business employees emphasized the need to use specialist English terminology and record key points from English language conversations with clients and supervisors. For example, the business employees in shipping had to be familiar with English terms regarding freight, such as FOB (free on board). Business employees in the design department advised that they use English to refer to fashion trends and

design themes, including the use of specific color terms to express a range of hues and tones. This requires an understanding of how language can be used to distinguish a particular product, such as a clothing line, from competing products. Employees need to use English to assist with marketing and advertising, requiring knowledge of the complexities of using persuasive language.

In addition, international clients frequently visit Taiwan and request factory tours. These visits are conducted in English as the common language between interlocutors. A key component of such tours are the meetings with designers and manufacturers, in which the clients are shown product samples and asked about their production needs. Throughout the buyer visits, business employees are required to take notes and report customers' requirements to their supervisors. Negotiation in terms of price and manufacturing time then takes place. The use of English for negotiating in the business profession will be examined later in the chapter.

My data showed oral communicative competence was emphasized more strongly essential to the business workplace than the engineering profession. The interview data from business employee participants also described the complex oral language skills required to provide culturally appropriate and efficient customer service. Business leader 05 described: *"When people asked 'how is your new boss?' Usually, the answer is 'His English is good.' Oral communicative competence is decisive to the success in business workplace'.* Business participants thus explained that oral competence in English is important to impress colleagues and clients.

Business employee participants also emphasized the immediacy of the oral communication required for conducting business. Business leader 01 explained '*A business employee often encounters ten conference calls from different countries in the same hour, she or he may require advanced proficiency and efficient communicative skills and adequate cultural knowledge.*' Indeed, the business interviewees identified socio-cultural competence in oral language production as essential for professional success. Frequently employees encounter a range of problems in the workplace and must resolve these urgently and without causing offence to the client. This necessitates indirect, diplomatic, and tactful communication in English. For example, one business employee participant advised: '*My customer asked for changing colors of products, but I could not meet the deadline of delivery if I changed them.*' Denying client requests whilst maintaining face for both parties necessitates high-level negotiation skills.

#### **4.2 Team Oriented Problem Solving (TOPS)**

Team Oriented Problem Solving (TOPS) was identified as a major professional task relevant to both the engineering and business workplaces. Vitally, given the multilingual nature of Taiwanese industry, English is used for much of these problem-solving processes. Strategies for TOPS were particularly emphasized as important to the leader employees of both the engineering and business industries, reflecting their supervisory role. It is surprising that other researchers have investigated engineers' professional tasks (Kaewpet, 2009; Spence & Liu, 2013), but have not identified TOPS as a central skill in the workforce.

## **TOPS in Engineering: English Use**

According to participants, a key aspect of the engineering profession is collaboration with colleagues in order to ensure quality output and to resolve problems with machinery and production. This collaboration is mostly conducted in English, as colleagues and vendors from other companies and/or other countries are involved. As previously mentioned, the process of professional problem solving also requires international meetings conducted via telephone or conference calls.

In terms of problem solving in the workplace, the major difference between the stage three and stage four engineers related to the scale of the problem. According to my data, leader employees are required to use English to manage large-sized projects including local and international human resource assignments. These communications are conducted in high-pressured situations where the smooth functioning of machinery is imperative. In contrast, non-leader engineers are required to perform similar tasks but with less responsibilities than leaders. Non-leader engineer 05 described the importance of being able to successfully complete problem solving tasks in English. He explained, *'The products were semi-conductor wafer and each piece usually cost more than USD 7,000. If they did not solve problems in time, more and more wafers could be broken and cause massive loss of money.'*

According to my data, the most prominent model for team-orientated problem solving in the engineering workplace is the Ford 8D framework. Leader engineers stated that they had been provided with training courses to acquaint them with the Ford 8D

model. This approach to problem solving is based on 'Ford's Eight Disciplines Problem Solving', a framework derived from the Ford company (Krajnc, 2012). The Ford 8D skills were originally applied in the automobile industry in the United States but are now utilized globally and across many industries (Ford Motor Company, 1987).

The Ford 8D model consists of eight stages or 'disciplines' (Ford Motor Company, 1987). The preparatory stage is termed D0 and requires employees to devise a plan to meet the specific need or resolve the problem. Based on the design, the first step (D1) is to assemble a small team of workers with the right skills to ensure the plan is feasible. Having completed these two disciplines, D2 involves making a precise description of the problem and its implications. D3 isolates each problem in order to avoid generating more problems, and then take containment actions. After the problem is isolated, D4 involves identifying possible root causes of the problem and properly verifying each of these causes. Having identified root causes, the goal of D5 is to establish a permanent correction that will solve the problem, and to evaluate any side effects. D6 requires employees to take corrective action and eliminate the root causes of any further problems. To prevent the problems from reoccurring, D7 requires employees to modify any problematic aspect of the process. Finally, D8 involves congratulating the team members for their efforts and granting recognition for the success. According to my research, these stages of the Ford model are carried out in English as engineering teams in Taiwan are comprised of Chinese and non-Chinese speakers from various countries. Understandably, a very high level of proficiency in English is required to execute these steps productively.

Of significance, the interviews with the engineers revealed that the application of the Ford 8D model occurred within an intercultural context; something that was not an emphasis in the 1980s when the Ford car company first established the model. However, along with globalization, a range of industries has utilized the Ford 8D framework with team members from different cultures and countries. In explaining that the application of Ford 8D model involved not only problem solving skills but also intercultural competence, leader engineers stated: *'When I use English with Japanese, I tend to slow down and I nod my head often during talking to them as they speak English slowly and they nod and bow to me often. I am try fitting into their culture.'*

According to the engineering interviewees, only the engineers with efficient intercultural communicative skills and problem solving skills in English can succeed in the engineering industry. Communication between colleagues is often urgent and involves a range of English dialects. If team members cannot respond to each other immediately or properly, the process of problem solving is delayed and delays can cost a company a thousand US dollars a minute. Notwithstanding, this complexity and immediacy of communication in an intercultural context is very unlikely to be learnt in the classroom of university. No reference from my student participants identified TOPS as a key skill in language use, but 22 references from 12 employee participants recognized TOPS as an essential professional task. This need for ESP students to have an understanding of the workplace they intend to enter, will be pursued in chapter five.

### **TOPS in Business: English Use**

Non-leader and leader business employee participants did not use the specific term 'TOPS'. Instead, business employees tended to refer to general problem solving processes, with far less structure in terms of stages. Further, problem-solving tasks in the business workplace are intended to satisfy client requirements rather than attend to machine-related problems. Frequently such problem solving processes involved conference calls; as a business leader stated: *"We need to have good teamwork to solve clients' problem. And English is the tool to communicate with team members and colleagues"*. Whilst the importance of teamwork using English was emphasized by business leaders, several non-leader business employees explained their difficulties of teamwork, and they stated: *"I found it's difficult to have con-call as there are many kind of accents in the team members"*, and *"solving clients' problems and win the trust from clients always require good teamwork"*. From my data, teamwork is essential for not merely solving problems but also for negotiation with other team members or teams. One of business employees stated: *'negotiating the price and quality control of products is very important. We need team members from other countries to negotiate price and solve problems'*. The importance of negotiation skills will be discussed below.

### **4.3 Negotiation Skills**

The data from engineers and business employees emphasized the importance of being able to use English to negotiate strategically and appropriately. Whilst interviewees from both industries emphasized the importance of negotiation in the workplace, the specific goals for these interactions differed. Engineers stated that they mostly used negotiation skills to manage human resource issues, resolve problems, and assign

responsibilities. In contrast, negotiation in the business workplace was usually related to arriving at a suitable price and establishing a business transaction to meet clients' needs. Regardless of the slightly different goals of negotiation in the two industries, these communicative acts require complex English language skills.

### **Negotiation in the Engineering Industry**

As stated earlier in this chapter, a key use of English in the engineering industry occurs in relation to resolving machinery-related problems. Given the urgency of resolving these issues, engineers must receive assistance from colleagues in a timely fashion. If all staff members are occupied with other tasks, it may be necessary to negotiate with a colleague to gain their involvement. For example, one of the non-leader engineers mentioned: *'I am running some data to trace the root cause of problem and found I need the cooperation from other department. As everyone is busy, and may turn down my offer. I need to negotiate carefully with them for help'*.

Compared with non-leader engineers, leader engineers indicated that a broader range of negotiation skills is required. Specifically, English is utilized to negotiate within the context of conference calls with colleagues and vendors. According to my data, leader engineers sometimes urgently require additional support for complex machinery-related issues. In this situation, the leader engineer gathers the entry to mid-level employees who are involved in the matter and call the vendors for support. According to my data, this situation involves a great deal of negotiation skills. Not only are leader engineers required to use English to negotiate with every engineer to discuss possible

solutions, they are also required to negotiate with other leaders to borrow machines in order to test solutions. One leader engineer highlighted the crucial role that negotiation skills played: *'Some leaders could not efficiently solve problems as they could not negotiate well with the engineers from other countries. These leader could not use English to negotiate even though they could speak English'*.

### **Negotiation in the Business Industry**

According to my data, negotiation in the business workforce occurs within an extremely competitive relationship between buyers and sellers and is therefore considered one of the most difficult linguistic tasks associated with the profession. The atmosphere of communication can sometimes be harmonious but it can also be full of conflict when it comes to prices. Unlike engineers, business employees have to make profits from clients whilst simultaneously maintaining friendships with them. The competitiveness in the business workforce therefore can be very intense, unlike the friendly collaboration among engineers who share similar goals of solving machine-related problems. Using English to negotiate within this competitive environment requires a high degree of pragmatic and linguistic proficiency.

According to the data, non-leader and leader business employees deal with various situations requiring high levels of English language skills, including negotiating for product delivery, changes to the amount or colors of merchandise, or notifying clients of a delay in manufacturing. I analyzed the data from business participants' interview responses and identified three stages of the negotiation process: pre-service, during

service and after service. Significantly, English language is required for the completion of each of these stages.

The pre-service stage of business transactions has been identified in other research (see Alessandra, O'Connor, & Van Dyke, 2006). Consistent with existing research findings, my data indicated that several tasks were integral to the pre-service stage (Alessandra, O'Connor, & Van Dyke, 2006). In order to prepare to negotiate with clients, employees collect information prior to officially meeting with potential customers. Pertinent information could involve the background of potential customers and the competitors in the same business areas. This data needs to be collected and discussed in English.

Next, business participants design a set of slides to present the SWOT of the product and the sales company. Participants cited the SWOT model as an important framework for business negotiation. SWOT stands for the Strengths, Weaknesses, Opportunities and Threat of a product (Piercy & Giles, 1989). Business employees are required to make a presentation in English based on these elements of SWOT. Such presentations may be presented individually or in a team. The fluency and effectiveness of the presentation are thought to reflect on the efficiency and capability of the sales company.

Business leader number 03 elaborated on the importance of preparation before a business negotiation meeting stating: *'To prepare for negotiation, you have to dress properly, look confident, and speak powerfully. The related handouts or documents*

*should be displayed in a concise way so that clients can understand the main ideas in few minutes. Otherwise, clients could lose their interests if they cannot immediately understand what the handouts mean. You have to communicate very confidently. Clients cannot trust sales people who have no confidence or have poor communicative ability.'* This stage of negotiation therefore requires oral proficiency, persuasive language use, and an understanding of the report and handout genre.

The second phase in business negotiation occurs during service and is aimed at achieving a win-win situation for both buyers and sales people. These negotiations occur within high-pressured situations and require a great deal of communicative competence in order to bargain, disagree, or express criticism in a culturally and socially acceptable fashion. Any hostility must be avoided or quelled immediately in order to maintain the relationship. Business leader 05 elaborated: *"Negotiators have to open their minds to criticism and quell the tension of the atmosphere during negotiation. To negotiate successfully, indirect strategies are often helpful."*

There is a large body of research investigating indirect and direct communication strategies (Joyce, 2012; Searle, 1979; Tannen, 1994). My data has highlighted the importance of indirect strategies to language use in the Taiwanese business workplace. Business leader 03 provided an example of an indirect communication strategy in English used to diffuse tension within business negotiations: *'sometimes clients ask for very unreasonable discount and it is an impossible deal. I want to shout 'impossible!' but I won't. I would smile and say 'thank you very much for your suggestion, I would love to do so but I am afraid I cannot.'* Indirect strategies are fundamental for doing

*business.*' According to the above participant, both the interjection *'impossible!'* and the statement *'I would love to do so but I am afraid I cannot'* were a rejection of the client's suggestion, but the latter is indirect and therefore considered to be more polite than the former. The ability to phrase responses in indirect forms of English not only requires syntactical and lexical knowledge but also pragmatic and intercultural competence. Kramsch (1993) advises that adequate communication should include not merely linguistic proficiency but also the skills of social interaction across cultures.

Interview data revealed an additional aspect of complexity in business negotiations in Taiwan. Most business interviewees discussed the importance of avoiding price reduction as this was seen to lead to fierce competition. Interviewees advised that if sales companies reduced costs to compete with their rivals, the product quality could deteriorate. These cost-down strategies often led to a vicious cycle: low cost, low-end quality, losing buyers, financial crisis and even bankruptcy. This placed more pressure on employees to negotiate a win-win outcome; which requires high-level English language competency. Business leader 02 explained *'Only the situation of win-win can maintain a productive market and avoid a declining market. Successful business employees should be able to negotiate with buyers not only about price but also about gaining opportunities to cooperate again.'*

According to my interviews, business employees are required to keep promoting existing products to current clients whilst seeking new markets. Therefore, it is essential to maintain friendly relationships with current customers and to attract

potential clients. Good quality service can create rapport between seller and buyer and eventually built up a company's reputation. However, good quality service requires immediate responses to client enquires, and these are usually communicated in English. The immediacy and urgency of such communication in a foreign language presents a significant challenge for business employees. Business leader number 02 illustrated, *'I receive two or three hundred emails a day. Sometimes, one hundred e-mails showed 'urgent!' on titles. I have to reply soon otherwise clients will complaint my service is not good. Also, I have twenty or more conference calls daily. There are several members talking on a conference call. These members could be managers in USA office, or customers in Germany, or colleagues in other countries.'*

As multiple communications occur during and after working hours via both email and conference calls, business employees need to take clear notes and follow up on all enquiries. In the interests of transparency, details of job assignments must be recorded precisely, clarifying the 5Ws; Who, When, Where, What and hoW. Therefore, in addition to the complexity and immediacy of communication during the process of negotiation, business employees are required to maintain accurate records using specialist terms and in accordance with the specific text type.

According to interviewees, the third step in the negotiation process is to offer quality after-service. Business leaders emphasize that this step is just as important as the processes of pre-service and during-service. Further, business leaders state that opportunities for further business deals are based on the win-win outcome of the

previous deal. Accordingly, sales employees have to initially confirm if customers are satisfied with the product and then actively monitor buyers' demands and provide new products to meet these demands. Meanwhile, the sales team needs to plan projects to present innovative products to buyers for potential cooperation. This requires employees to focus attention to both existing buyers and potential buyers at the same time. As discussed throughout this chapter, globalization renders the use of English as an essential tool for serving customers before, during, and after a business deal is completed.

#### **4.4 Soft skills**

According to Robles (2012), soft skills may be defined as desirable qualities for the purposes of employment that are associated with little technical aptitude. In contrast, the term 'hard skills' refers to the technical skills required to operate equipment and work with software or data (Laker & Powell, 2011). As the hard skills pertinent to the engineering and business professions have been discussed in the context of 'routine tasks', I will not revisit the use of English in this aspect of professional duties. From my data, the hard skills in the business and engineering professions were mostly related problem-solving skills and reporting procedures. As discussed earlier, these main skills were inter-related rather than discrete skills and usually occurred in English. Hard skills in the engineering workforce are the machine-related or software-related skills (Laker & Powell, 2011). In contrast, my interviews revealed that hard skills in the business workforce involve typing, communication technology, and word processing software.

Here, I focus on soft skills. The ability to manage responsible tasks independently with positive and flexible attitudes and behaviors are among key soft skills for employment (Robles, 2012). Further, Robles (2012) identifies the importance of initiative as a chief soft skill. Both engineering and business employees identified these skills as essential to professional success. Interestingly, business employees made 30 references to soft skills, whilst there were only 5 references from engineers concerning soft skills. The specific term 'soft skills' was explicitly used by both leader engineers and business employees, but not from any other group of participants; probably a reflection of senior employees' greater awareness of professional requirements. Nonetheless, in the globalized context of 21<sup>st</sup> century engineering and business industries in Taiwan, these skills were frequently applied using English. In addition to the soft skills identified by Robles (2012), interview participants emphasized the need for a positive attitude towards the English language.

Compared with the engineer participants, business employees placed greater emphasis on the importance of enthusiasm for successful English language communication in the workplace. The business participants made 56 references to '*enthusiasm toward communication*' as the most vital element of soft skills, with the engineer participants making only 17 references. The entry and mid-level employees emphasized the importance of a positive attitude when using English in the workplace. Employee participants explained: '*Some colleagues are so passive to use English*', '*I think active attitude toward communication is highly concerned by my boss*', '*I suggest sale people need to have enthusiasm toward communication, otherwise they cannot*

*success*, and *'Only the engineers who have enthusiastic attitude toward communication have chances of job promotion, no matter using Chinese or English'*.

A key phrase repeated by the engineers was *'active attitude'*, whilst the business participants frequently cited *'enthusiasm'* and *'initiative'* as important attitudinal characteristics. One business leader explained the need for enthusiasm when using English to communicate with international clients: *'sales need to be spontaneous to seek for potential buyers and sustain current buyers with enthusiasm no matter using Chinese or English'*. Another business leader stated: *'sales need to show their enthusiasm toward communication in a multi-cultural market. Without showing enthusiasm, potential buyers won't be interested in cooperation.'*

### **The Importance of 'Soft Skills' in the Engineering Workplace**

According to most of the leader engineers, most non-leader engineers lacked initiative when communicating in English during teamwork, but were active communicators when speaking Chinese. In fact, leader engineers pointed out that the lack of soft skills was one of the biggest problems confronting their subordinates. Leader engineer 01 complained about the passive attitude of his colleagues: *'Some engineers act differently when they need to speak English. They have good social skills when using Chinese but they were reluctant to communicate when they talked international members'*. Furthermore, leader engineer 04 discerned that soft skills are essential to opportunities for job promotion claiming: *'Some leader has good soft skills and have*

*good promotion. Because he can make his subordinates and international team members listen to him to successfully complete the tasks ordered by the boss'. Another leader engineer described a colleague's proficient soft skills: 'His subordinates like him and boss likes him; Taiwanese like him and international members like him'.*

### **The Importance of 'Soft Skills' in the Business Industry**

From my data, soft skills in the business workforce were mostly related to interpersonal relationships and negotiation to reach a win-win situation. Business leaders were able to provide explicit explanations regarding so-called soft skills but business non-leaders were more general in their description. For example, one business non-leader stated: *'I learnt from boss about how to have social skills in English, it is soft skill'*. In contrast, business non-leader 01 explained: *'Soft skills include building long-term relationship with clients by understanding their needs, negotiating with them, caring about clients' feelings. We need to perform professionally in front of the clients so that they can trust us. Not only make friends with clients but also make mutual profits with them. That is win-win'.*

Regarding positive attitudes toward oral and written communication, business leader 01 mentioned, *'It is very difficult to keep the communication going when clients are on the opposite position. Sales have to initially approach buyers, ask what are needed and do everything they can to win a business deal. But not every sales person has active attitude. There is no business if there is no positive attitude to communicate.'*

In addition, business etiquette was identified as an indispensable soft skill for maintaining rapport with clients. Business non-leader 01 explained how she was dedicated to sustaining friendships with clients, *'We not only do business with clients but also care about customers' lives. For example, I remember client's birthday and send a gift before the day. Our conversation includes business, life and headline news. We are usually friendly but we sometimes argue when we have to negotiate on business matters.'* Maintenance of rapport in such a business relationship requires high-level English language skills.

#### **4.5 Intercultural Communicative Competence (ICC)**

As already mentioned in this chapter, the globalized nature of the Taiwanese workplace means that business employees and clients are often from a range of countries and cultures. Non-leader engineer 03 explained: *'I am surprised to meet three new team members from [name of institution] today. They were recruited in Singapore but work in Taiwan now. I also have some members from Singapore, Malaysia, Macao and Japan'*. Non-leader engineer 05 further illustrated the intercultural nature of employment: *'we have branch offices in Singapore, America, Taiwan and China. Our company keep buying raw materials and machines from Netherlands, Japan and America. The buyers are from UK and other countries. So, English is the only one medium to communicate. No matter you are hired in Taiwan or in Singapore, you will be dispatched to other countries for receiving or giving training courses or giving technical support. The stay of expatriated employees could be for few days or years'*.

A strong theme throughout the interviews with engineers and business employees was the importance of intercultural communicative competence in maintaining a harmonious and productive atmosphere conducive to successful professional interactions. A working definition of Intercultural Communication Competence (ICC) is established by integrating definitions from Kramsch (1993) and Schiffrin (1996): the communicator with ICC possesses not only linguistic proficiency but also an understanding of the manner in which culture impacts every aspect of communication. Chick's research (1996) indicates that intercultural communication can fail if the communicators do not share a similar cultural schema regarding social relationships.

The fourth stagers – the leader participants – were particularly enthusiastic about the importance of intercultural communicative competence to success within the 21<sup>st</sup> century workplace. One stage four participant explained: *'communicative competence is no longer enough but intercultural communicative competence. If employees have good communication only in their own language without proper intercultural communicative competence, they would have difficulties to succeed in the international workforce'*. Another fourth stager highlighted the impact of globalisation advising: *'employees need to be diligent, creative and spontaneous to serve customers before, during and after a business deal is completed. The communication in an intercultural market has involved a great deal of intercultural communication and the use of English language'*.

One business employee participant specified that he felt he was frozen when meeting western customers: *"Usually, I am full of energy, but I am locked when I need to use*

*English. I am like frozen*". Also, engineer manager number 03 clarified one of the reasons why engineers keep silent in meetings: *'They are very silent when meetings are conducted in English with foreign engineers. After meeting, they become very talkative with other members when they speak Chinese. Apparently, their silence results from their poor English'*. A major theme in my interview data was the crucial role that the language barrier plays in restricting employees' participation in cross-cultural discussions. Namely, the Taiwanese participants in this research are not ambivalent toward communication but rather toward intercultural communication when English is used as a foreign language.

However, my data indicated that enthusiasm toward communication within an intercultural teamwork is a central requirement for language use in the business and engineering workplaces. The business participants in this research pointed out that successful communication involved not only linguistic proficiency but also Intercultural Communicative Competence. Five out of five learner engineer participants identified the importance of ICC to daily success in the workforce explaining: *'only the engineers with enthusiasm toward communication can have the opportunities for job promotions'*, *'a competent leader should be capable to communicate ...active attitude toward communication are highly required'*, *"we need an enthusiastic leader to organize a specific team immediately when problems occurs. Enthusiasm to communicate for applying TOPS skills is the key of EE'*. Likewise, eight out of ten business participants highlighted enthusiasm toward ICC as an essential quality: *"enthusiasm is the most demanded in doing business"*, *"You need to offer the service*

*before your clients ask for it”, “initially approach potential buyers and introduce your products in exhibition”, “enthusiasm to negotiate for win-win”.*

However, the interview data implied that leaders in the workforce are unable to boost their ICC merely by immersing themselves in intercultural contexts. Most of the leader participants in the engineering and business workforce admitted that they hired language tutors to help develop their intercultural competence. These leaders reported having ample opportunities to experience intercultural teamwork but they were unable to improve their ICC without expert guidance. Most of the interview participants who described themselves as having adequate ICC, had gained these skills through overseas study.

The inability to work autonomously to improve their English language skills may be linked to the employee interviewees’ unfamiliarity with independent learning strategies. A key theme to emerge from the interviews, was the employees’ disappointment that their education did not provide them with autonomous language learning strategies. Non-leader engineer 05 described his attempts at independent learning with despair: *‘I don’t know where to start. I did not learn to communicate since I learned English in high school and university. I feel I cannot make my mouth open when I have to speak English. I don’t know when I can finally know to learn communication.’*

This interview finding has important implications for understanding ESP in Taiwan and possible ways to improve learner outcomes. Firstly, the need for independent learning strategies provides critical information that could shape the ESP curriculum to enable students to attain life-long learning abilities. Secondly, the employee's inability to improve their language proficiency despite immersion in the English-speaking environment of the workplace, indicates that simply surrounding students with English is not sufficient for encouraging greater communicative competence. Rather, students require carefully scaffolded exposure, where teachers facilitate exploration of the key uses of language in an authentic sociocultural context, with explicit attention to independent learning strategies and a gradual withdrawal of teacher assistance to encourage learner autonomy. This will be considered further in chapter six.

### **ICC in Engineering**

Most leader engineers viewed their tasks as occurring within an environment of intercultural teamwork. Engineering manager number 05 explained the routine for leaders: *'To respond to international team members promptly and properly is highly required'*. Another engineer manager illustrated the inadequate ICC of his colleague: *'One of my colleague is very talented in engineering techniques, but was not promoted to higher position as his poor ICC. Every time he sees foreign engineer, he is like to be locked. His behavior changes when he meets international engineers'*. One leader engineer explained how ICC is essential for successful conference calls: *'In a con-call, an excellent leader would consider the cultural background when communicating with*

*intercultural team members. Leader need to use different strategies to elicit opinions from western and eastern people'.*

When problems cannot be solved via conference calls, engineers from other countries can be dispatched to Taiwan to help. In this situation, both non-leaders and leaders have to discuss the keys issues face-to-face with these visitors. According to interview participants, communication within an intercultural team is essential but considered more difficult than communicating with Taiwanese colleagues. Weak ICC can lead to inefficient problem solving skills as my data has indicated that most tasks in the Taiwanese engineering workforce involve intercultural teamwork.

### **ICC in the Business Industry**

The data from business leaders indicated that intercultural awareness and participation in conference calls were new challenges in the twenty-first century and should be taught in ESP education. Business leader 01 pointed out a lack of ICC in the Taiwanese workforce: *'Most Taiwanese are friendly, but respond passively to foreigners. They become timid to express opinions. In front of international colleagues, Taiwanese colleagues become inactive'*. According to my data, the inactive toward communication was related to a lack of ICC, not merely listening or speaking proficiency as most business employees had at least basic English skills when they were recruited. For example, another business leader illustrated the inadequate communication in the workforce: *'I see some sales people have good soft skills, but become stammered when they speak English on phone or have face-to-face meeting with foreign clients. They*

*have good grades of TOEIC test, but they do not show confident ICC'.*

As with the engineering employees, most business leaders considered face-to-face and conference call communication as requiring advanced Intercultural Communicative Competence (ICC). Most business leaders mentioned that they exchanged information by frequent activities and con-calls with foreign clients and they said non-leader and leaders needed to attend regional or global meetings, and discuss promotional strategies with other companies' marketing departments. Most non-leader and leader business participants considered that the employees with weak ICC could misunderstand clients' requirements and consequently could decrease the credibility and trustworthiness of their company. Further, employee participants emphasized the value of ICC as a tool for bridging distance between countries and cultures. Business leader number 02 stated: *'I like to keep absorbing knowledge in English and to develop an international perspective so I can bring myself into line with other countries in the world not merely with Taiwan.'*

Similarly, business leader 04 stressed the advantages of ICC: *'The new employee with international communicative competence could be assigned to help senior managers with international exhibitions, or annual conferences overseas, and eventually be promoted to higher positions.'* In fact, most business participants reported that new employees without efficient ICC could not survive in the workplace for more than three months whilst engineer participants stated that the engineers with ICC had better opportunities for promotion but those with weak ICC could still survive in the industry. This suggests that ICC is more highly demanded in the business industry than in the

engineering profession.

#### **4.6 Recruitment**

According to the interview participants, there are different criteria for recruitment employees in the engineering and business workforces. The main difference is that business employees are required to provide certificates of English language proficiency before being recruited, whereas engineer employees are not required to provide any certificates of proficiency before and after they are recruited. This suggests that the business industry demands higher levels of English language proficiency than is expected in the engineering workforce.

According to the engineer participants, recruitment criteria involve listening and reading skills, but not speaking or writing skills. Engineers are required to complete English language listening and grammar tests. These are followed by a face-to-face interview conducted in Chinese, not English. This criteria for recruitment is in line with the data provided by engineers concerning the importance of English language reading and writing skills for accessing manuals, emails, and managing projects in the workplace. As one leader engineer advised, *'A newly employed engineer could not survive for three months because of his poor reading. Our work needs a lot of manual reading for solving problems. We have hundred manuals, written in English only'*.

Like the recruitment criteria described by the engineering employees, the participants from the business industry stated that reading skills, such as understanding authentic

business documents and letters, are also featured in the recruitment criteria. However, a major point of difference between the engineering and business employees was that the latter are required to also prove their oral proficiency as part of the recruitment process. Again, this reflects the importance of English language speaking and listening proficiency to survival in the business industry.

In Taiwan, schools and employers apply several assessments of language proficiency as gatekeeping devices, including General English Proficiency Tests (GEPT) produced in Taiwan, and other international tests such as the Test of English as a Foreign Language (TOEFL) and the International English Language Testing System (IELTS). According to the data from my interviews, most international business firms require potential and current employees to gain at least one certificate of English language proficiency.

Business non-leader 03 declared: *'GEPT is the most general certificate that potential employee can offer, because the certificate of GEPT in intermediate level is the basic requirement in my company.'* Therefore, certificates of English proficiency are essential for entry into the business industry in Taiwan but reportedly less important to Taiwanese engineering firms. However, business participants claimed that certificates of proficiency do not guarantee communicative competence. Business leader 02 explained: *'many employees have poor pronunciation and cannot communicate with foreigners even though they have certificates. Possibly, intermediate GEPT is in a very low level'.*

According to my interviews, communicative competence is included in recruitment for

business employees but is excluded in recruitment for engineering employees. Business leader 01 specified: *'The basic skills of communication for new employees involve efficient listening and fluent speaking skills with sensitiveness of cost and profits. Also, writing business letters politely and properly is another basic skill to survive. In other words, sales people need proficiency plus intercultural knowledge'*.

Business leader 01 compared the difference between grammatical proficiency and communicative competence in relation to recruitment commenting: *'What I want is communicative competence. I want my subordinates represent my company, represent me to communicate with clients with confidence. I don't think proficiency tests can evaluate communicative competence or confidence'*. According to my interviews, certificates of proficiency, such as GEPT or TOIEC, bring advantages for job opportunities, but most companies establish their own assessments for recruiting new business employees. Business leader 04 described one such assessment: *'The test contains two parts. First one is a small scale of TOEIC test lasting 30 minutes including listening and grammar rules. The second one is face-to-face interviews in English, including self-introduction, the knowledge regarding international business, teamwork skills, and social skills'*.

#### **4.7 Graduate Preparedness for Language in the Workplace**

As interviews revealed, negotiation in the business workforce involves specific processes associated with pre, during, and after-service. Nonetheless, leader business participants advised that their own experience of ESP education did not prepare them

for these specific uses of English. Several business leaders disappointedly described the inadequateness of ESP education: *'listening to CD player cannot help me talk, I need people to interact in real life, not fake or artificial situations'*. Further, business leaders advised that the authentic features of communicating in the business workplace could not be replicated in the classroom: *'Talking in classroom is too relaxing, but talking in business world is all about win-win, making money for seller and buyer and 'the role play in classroom cannot foster business experts. You know why? Because negotiating in the classroom does not provide the urgency or complexity of communication'*.

Further, leader business employees' experience with new recruits suggested that ESP education had not progressed in terms of preparing future business employees for the specific language skills required for negotiation in the workplace. Business leader 05 expressed disappointment regarding current university education: *'When I recruit new staff, I find new graduates don't have better English than old ones. I don't think English education in Taiwan is improving much. The worst one is the listening skill. The speaking is inefficient, reading is somehow capable, and writing is not good enough. Most of the staff members with good English usually studied overseas. Taiwanese universities need to help communication.'*

According to interviews with the business and engineering employees, Taiwanese learners were accustomed to listening quietly during ESP classes and were unable to cope with the communicative demands of the workplace. Non-leader engineer number 05 illustrated the weak speaking and listening skills of colleagues in the engineering profession claiming: *'Most engineers get anxious when they answer phone calls in*

*English as they are barely able to speak English or their listening comprehension is not efficient at all.* Engineering manager number 04 described the phenomena of silence among Taiwanese users, *'most engineers are silent and passive when they have to communicate with others in English. They are so afraid to lose their dignity or authority as they are afraid that other people find their English abilities are poor. They think if they keep silent, other people cannot find out their weak language abilities.'* Business leader 03 was very critical of unsuccessful EFL education advising: *'Taiwanese are learning disabled English (Ya-Ba Eng-Wen) as they learn it silently and use it silently.'* The term 'Ya-Ba' denotes 'deaf' in Chinese. It suggests that most Taiwanese learners are neither able to speak English nor able to comprehend speech even after having learnt English for approximately ten years.

Furthermore, the participants in the engineering and business professions indicated that their anxieties regarding communication in English resulted from inexperience with intercultural communication and a lack of communicative practice before entering the workforce. Non-leader engineer 01 described his feelings when encountering western engineers explaining: *'I feel like I am 'locked' when I meet white western engineers. I associate 'white people' to 'English language' and immediately feel anxious if I have to talk to them. I am ashamed of myself in front of these white people if I could not communicate in English.'* Similarly, business non-leader 03 explained: *'I seldom initially proposes suggestions or interrogates clients or bosses in first two years of my job. I am afraid of talking to foreign customer, but I always make sure I am polite to them.'* Further, Business non-leader 04 expressed her nervousness during a con-call with overseas clients explaining: *'I was too nervous to listen to them and barely able to*

*defend my stance. They were talking so fast and sounded angry, I was in panic during the call.*' Obviously, ESP education has not provided sufficient exposure to intercultural communication and the opportunity for students to develop ICC.

Business non-leader 01 illustrated her difficulties with ICC and linked these to the lack of communicative teaching in her ESP education: *'When I just graduated from university, I felt my tongue was locked when I tried to speak English. The practice of communication by using English as a medium is overlooked in the university. Most of the time, English teachers explain grammar and vocabulary in Chinese without teaching communication. In international business workforce, proper and immediate response is highly demanded. I did not learn communicative skills in university.'* The metaphor expressed by Business leader 05 has shed light on the solution of passive attitude: *'In order to unlock their passive mind, educators need to pay more attention on giving communicative practice for the use in real life'*. Other participants also illustrated the importance of authentic use referring to: *'real business letter', 'real clients', 'real business deal', 'will lose money if I misunderstand clients' requirement', 'real project', 'real problem' and 'real bargain for price'*. From my data analysis, it is clear that the majority of employees argued for greater authenticity in ESP education in order to better prepare graduates for the workforce.

The interviews also showed that the majority of the engineer participants desired to strengthen their English language skills for project and report writing and TOPS. Non-leader engineer 05 expressed his disappointment regarding his weak writing skills

explaining: *'I am frustrated to write proposal as I never learned in university, and no one teach me how to write after work. I hope I have learnt before.'* Non-leader engineer 04 revealed the consequence of weak project writing skills: *'I see some colleagues are very good at problem solving but poor at project writing. So they cannot get promotion after ten years. Some others are good at TOPS and also at project writing, and they get promotions rapidly.'* English language skills were therefore considered essential to promotion prospects and opportunities for bonuses. Disappointedly, most non-leader and leader engineers were not satisfied with their own ICC or project writing skills.

In contrast, the business participants highlighted that negotiation skills were the most important English language tasks and the most difficult skills to learn. The business employees without proficiency in this area would not be assigned to attend the meetings with clients and therefore lost opportunities to learn negotiation skills. In a meeting room, there could be several competitors and buyers. Weak negotiation skills would allow rivals to win purchasing orders. Business leader 01 illustrated the importance of negotiation skills with this account of a disappointing experience: *'in a very competitive meeting, there were a big buyer, me and other three rivals. A rival from Singapore spoke good English and good at negotiation won the order. I was very frustrated to lose the chance. I could provide better offer to buyers but I could not negotiate well in English. I hope all sales should learn negotiation.'*

#### **4.8 Summary of Chapter Four: English as a Foreign Language in the Engineering and Business Workplaces in Taiwan**

This research is the first study to compare the language use in the Taiwanese engineering and business professions by interviewing engineering and business employees. Interviews with entry/mid level and senior employees from the business and industry workplace revealed six categories of skills required by both professions. From my data analysis, routine tasks denote daily responsibilities for employees, such as the use of English to answer telephone calls and write emails; negotiation skills denote the skills to communicate with clients or team members in order to reach a compromise; soft skills denote the non-technical skills required to build rapport and a long-term relationship with clients by understanding their needs; hard skills refers to the technical skills required to operate machines and work with software; and ICC stands for the competence to communicate appropriately with the counterparts from different cultures or countries.

More than a list of tasks or functions, this taxonomy shows the interrelationship between various task categories and may inform ESP curriculum design. The interrelationship of these six categories in the engineering and business industries is represented in the diagrams below (see Diagram 4.1 & 4.2). The notion of interrelationship among dimensions elevates language education to consider not merely lists of tasks but also the holistic interaction among each dimension. For example, If English educators and curriculum designers can incorporate integrated tasks rather than merely focusing on discrete tasks, learners are more likely to experience authentic language that has the potential to prepare them for real world language use. Chapter six will propose a framework for a new ESP curriculum based on these taxonomies.

Participants from both professions expressed the need to improve oral communicative competence and listening skills. These skills were perceived to be the most difficult to acquire. As Richterich (1984, p.29) advises: ‘...a need does not exist independent of a person. It is people who build their images of their needs on the basis of data relating to themselves and their environment’. The interview data also revealed several differences between the engineering and business employee priorities. The distinctive aspect emphasized by engineers but not business employees was TOPS, which refers to Team-Oriented-Problem-solving skills. In contrast, the business employees emphasised ‘win-win negotiations’. Secondly, in the business profession, the relationship among communicators was perceived to be competitive in contrast to the collaborative environment of the engineering profession.

As a result of the specific challenges of language use in the workforce, many business and engineering employees revealed that they hired language teachers to assist them with developing English proficiency. Engineering manager number 02 stated: *‘Usually, more than 50% of the candidates of managers, hire English tutors for more than one year. Our company pays for the fee for those candidates. I have been hiring a tutor for 2 years for preparing to gain higher positions.’* Several non-leader engineering and business participants also claimed that they were taking English classes after work. Leader engineer number 03 pointed out *‘Important tasks are only assigned to the staff with quality communicative abilities in English. Therefore, English competence is highly concerned when I assign critical tasks to subordinates’.* Business non-leader 02 stated: *‘My company laid off 20 % of employees in 2009. English proficiency was the decisive*

*competence to survive.'*

This research is also the first study to compare non-leader and leader employees in terms of English language use. The interviews with entry and mid-level employees revealed the chief challenges encountered in the transition from university to the workplace. Leader employees provided richer and more specific data than non-leaders, reflecting their broader experiences and insights with the professional context. The coded data revealed that 76 suggestions for changes to ESP education were from leader employees. These leaders demonstrated their leadership and enthusiasm for improving English language proficiency in the workplace by openly exploring options for improving Taiwanese Education.

My data from employee interviews also referred to the need to bridge the learning in classroom and the language use in the workforce, as one employee commented '*The communication in the workforce should be experienced by university students. Otherwise, they don't know how to use English after they graduate*'. Significantly, both engineer and business leaders advocated the importance of internships in ESP education. Expressions such as '*hands-on experience*', and '*authentic use*' were often used by leaders when suggesting solutions for problems with ESP education in Taiwan. There were 29 references to the importance of internships from the leader participants, 2 references from the non-leader employees, and no references from the student participants. As one leader employee advised: '*The people with working experience have better attitude to respond in English*'. Another business leader

explained: *'Real jobs can provide the practice of communication with concerns of money. You know, in the classroom, you can speak terrible English without losing money'*, and *'the practice of conversation in the classroom is not useful in real work.'* Participants expressed the importance of authenticity with the comments: *'I was tested to read authentic business letters when I was recruited'* and *'I suggest ESP learners work in real workplace, and otherwise they cannot communicate when they meet real foreign clients for real business'*. One business employee participant illustrated that he did not learn to communicate and perceived English to be an academic subject for study rather than a living language: *'after I enter the workforce, I feel English is everywhere in daily life but I also feel it is very far away as I never use it to communicate before'*. Perhaps one of the most powerful statements regarding the inadequacy of ESP education was when an engineering employee exclaimed: *'I was trembling when I first time used English to talk to my client. I realized what I learnt in university was not enough'*.

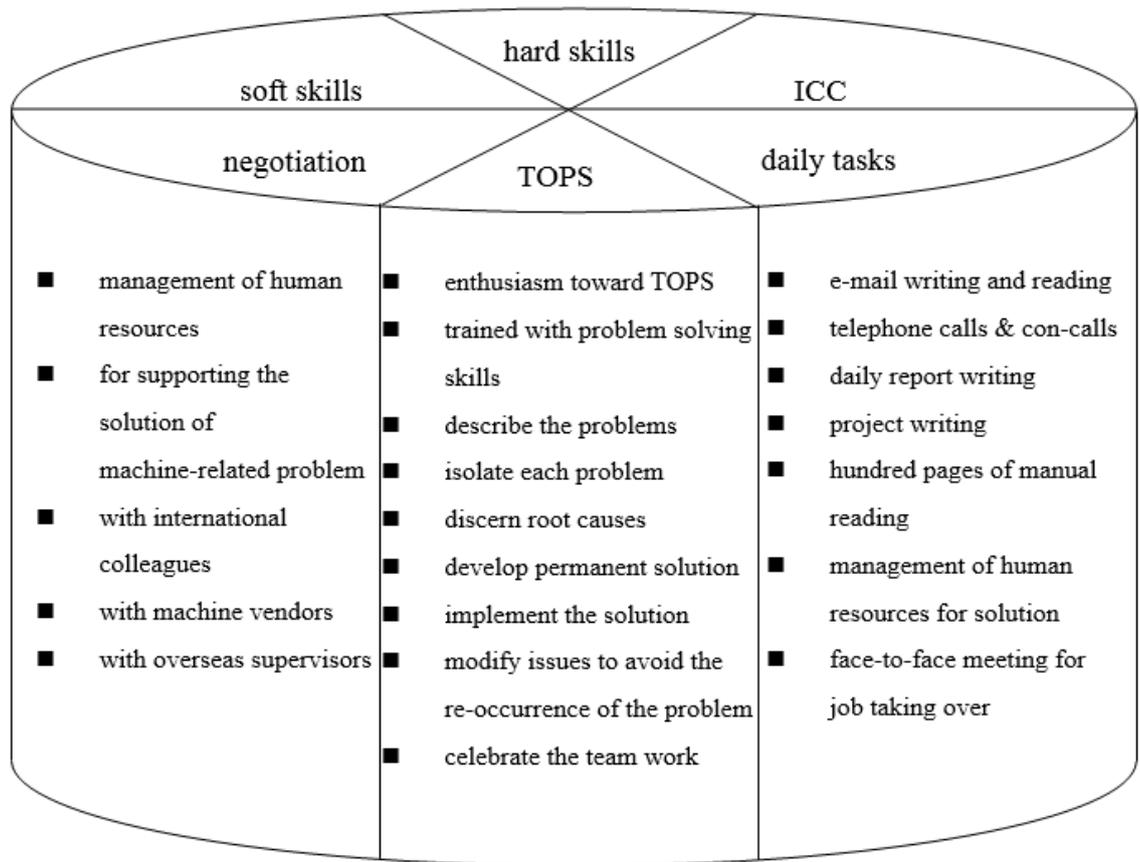


Diagram 4.1 A taxonomy of language in the engineering workforce

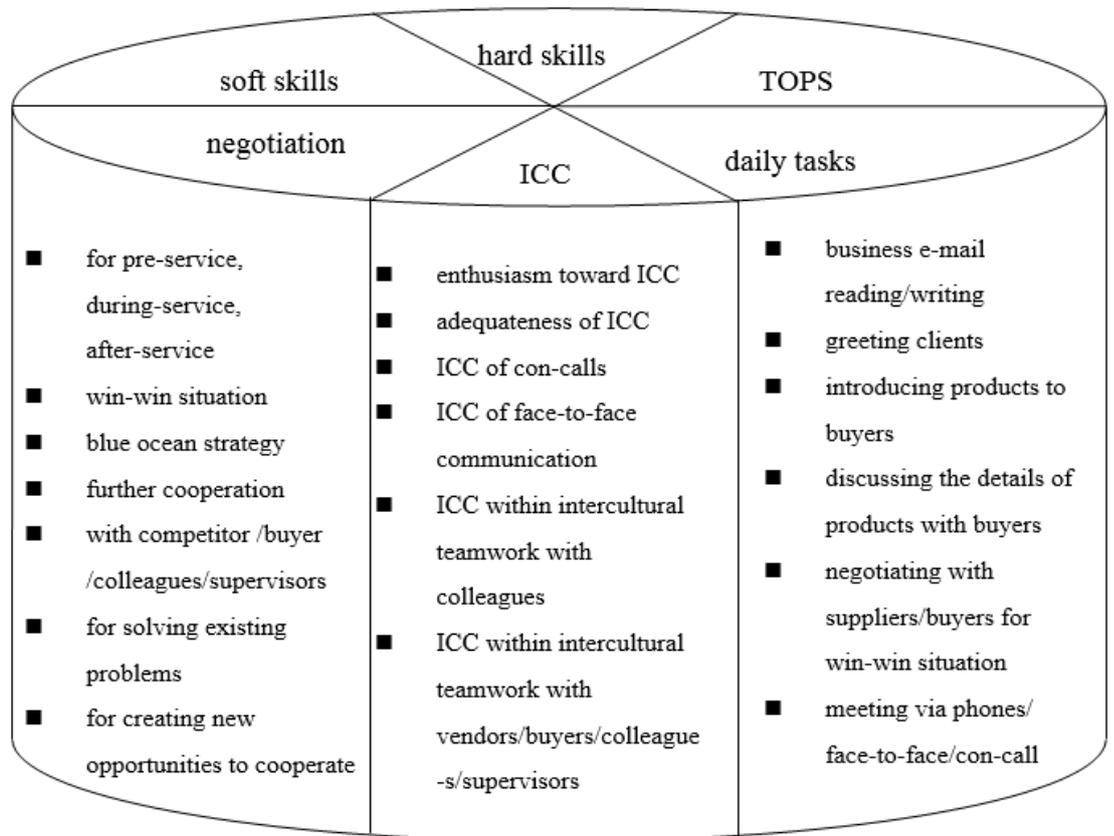


Diagram 4.2 A taxonomy of language in the business workforce

## **Chapter Five**

### **Student Perceptions of ESP Education in Taiwan**

This chapter examines the data gathered from in-depth interviews with first and fourth year ESP students. The major themes extrapolated from the interviews will be discussed, namely the dominance of grammar translation approaches to ESP, Taiwanese ESP learners' aspirations and anxieties regarding English language education, the varying conceptions of the purpose of English language learning, and the perceived gaps between the academic context and professional uses of English in the workplace. Hence, student input regarding the particular challenges encountered whilst undertaking tertiary ESP education and interviewees' proposals for greater support regarding the transition from university to employment will be considered.

#### **5.1 Lack of Communicative Competence**

One of the surprising issues to emerge from the interviews with first and fourth year ESP students was that in spite of increased government funding directed toward improving Taiwanese EFL graduates' communicative competence, most students in this research expressed disappointment in their lack of English proficiency. As discussed in chapter one, the Ministry of Education (2011b; National Development Council, 2009) has stated that the primary goal of English education is to cultivate communicative competence. As was shown in chapter four, the business and

engineering employees felt their education had failed to prepare them for the realities of English in the workplace. Surprisingly, whilst undertaking their English language education in different decades to the professionals who were interviewed, the student participants claimed to have experienced similar grammar translation approaches to teaching. The need to improve oral communication was highlighted by most of participants and they complained that Taiwanese learners were provided with limited opportunities to experience communicative teaching and learning in high school and university.

### **Grammar Translation in Taiwanese ESP**

76 references from my data identify a lack of communicative language practice at high school and universities. This is in contrast to the requirement for a high degree of communicative competence in English that characterises both the engineering and business workplaces, as revealed in chapter four. My finding concerning the dominance of the grammar translation approach to language teaching in Taiwanese universities is in line with research outcomes from Chern (2010) and Liou (2004) that indicate that most Taiwanese universities focus on teaching English reading rather than integrated and holistic communicative practice.

Further, my interviews indicated that Taiwanese students do not learn English for communication in junior and senior high schools. 94 references from 23 participants

across both the student and employee groups referred to unsatisfactory learning experiences in high school: *'I did not learn to talk', 'I am frustrated about my speaking',* and *'endless tests kill my learning motivation'*. According to the first and fourth year university students, most high school English classes in Taiwan tend to prioritise the memorisation of English vocabulary and grammatical rules, as is typical of the grammar translation methodology.

Students described this approach as 'sit-and-listen' and explained that English language structures were taught with minimal opportunities for students to communicate using the language. 8 out of 10 first year students in my research referred to the unsuitability of this 'sit and listen' approach with a total of 11 references expressing negative views. Among the key complaints, student interviewees stated: *'my learning experience is 'sit and listen'. I was not asked to express my opinions', 'since I learn English, I only sit and listen to teachers, I don't know how to say what I think at all', and 'my teachers wanted us to memorize correct answers for test paper, so we only sit and listen in every class'.*

Most of the first year students advised that the goal of English language learning in high school is to apply the correct grammatical rules to answer examination questions, rather than to produce meaningful utterances. As listening and speaking skills were not assessed in junior and senior high schools, the teachers and learners did not spend class time on these skills. Rather, decontextualized memorisation of vocabulary and grammatical structures was emphasised.

Further, the interviews reported that the medium of instruction in the high school EFL classroom is Chinese and communication among peers and teachers involved little use of English. As such, the students who tried to speak English could face ridicule from their peers. The student interviewees also stated that the textbooks and materials utilised in high school English classes were out-dated and boring.

Similarly, interviewees expressed reluctance to use English in front of university classmates. 8 out of 10 of the first year ESP students indicated they felt uncomfortable to communicate in English as they were afraid of humiliating themselves: *'Few classmates can speak English, and few dare to talk in English. We are so afraid of being teased', 'I dare not to talk in English, as I was teased before. They said my pronunciation is too funny', and 'my classmates make efforts on preparing for tests, but no one is brave enough to speak English with others. People will laugh'*.

A chief difference between the students' experiences learning EFL in high school and at university was that English is used for subject learning at the tertiary level and incorporated English textbooks and English-as-a-medium-of-instruction classes. In contrast, high school students are not required to learn by reading English textbooks. According to interviewees in this research, university students are immediately confronted with the challenge of reading English language textbooks as soon as they enter tertiary studies. This was identified as one of the most challenging aspects of transitioning from school to university. Most of the first and fourth year ESP student

participants claimed that they lacked proficiency and suggested that high school EFL education did not assist them to advance as English language learners.

### **English Language Aspirations**

After recalling their learning experiences in high school, most of the first year students expressed plans to prioritize the improvement of English speaking and listening skills whilst at university, as they claimed that these were the weakest aspects of their language. Interestingly, the employee participants also identified listening and speaking skills as the most challenging aspect of foreign language use. In fact, 32 out of 40 interviewees in the student and employee groups indicated that weak listening and speaking skills had built a barrier to their communication in English: *'my listening is very poor'*, *'I don't know how to speak'*, and *'listening and speaking are the weakest'*. However, despite expressing similar priorities for their expansion of listening and speaking skills at university, most of the fourth year students interviewed stated that they could still barely comprehend the main ideas when reading English language newspapers or listening to CNN news.

This lack of communicative competence was a source of disappointment for interviewees. First year student 02 sadly shared his experiences learning English at high school, explaining: *'I have been trained to select a correct answer immediately, but neither to appreciate the beauty of literature nor to use English to express*

*opinions*'. Likewise, first year student 01 described her weak listening skills: *'I understand the text by reading it in my mind, but I cannot understand the same text by listening to it. I comprehend the texts by reading but I don't know the pronunciation'*.

Similarly fourth year students expressed disappointment with their ESP learning experiences, also identifying the 'sit and listen' approach as the main teaching method in university classes. There were 24 references to the 'sit and listen' approach from 7 out of 10 fourth year interviewees who expressed negative sentiments: *'I still sit and listen in university, because teachers usually explain reading in English and Chinese and we listen'*, *'I think university teachers can speak better English than my high school teachers, but I also have few chances to talk in English, because we have 50 students and one teacher in a class'* and *'I think sit and listen is still the main thing in university'*. According to most participants, pair work provided some communicative practice in the tertiary classroom, but it was ineffective when both students had low levels of proficiency: *'sometimes but not often, we have pair work, but my classmates are not active'*.

The fourth year students were able to identify and articulate more aspects of communicative competence than the first year student interviewees. By virtue of their additional time at university, the fourth year participants were able to identify specific English language learning needs including skills for academic writing and ICC for pursuing professional development. Most of them stated that their difficulties with

academic writing included a lack of knowledge regarding text type structure and appropriate vocabulary.

In contrast to the first year students, the fourth year interviewees associated English education with academic and professional purposes, such as learning English for gaining opportunities for participation in overseas student exchange programs, for undertaking master degrees, or for eligibility for international recruitment. In addition, traveling to other countries was valued as one of the primary motivations for learning English by most of the participants, including students and employees.

The fourth year students felt that they did not have the English language abilities required to apply for job positions or study for higher degrees. In order to succeed in the workforce, most of the fourth year students planned to prioritize their oral communication after their graduation. In addition, most fourth year students were disappointed with their listening, speaking, and communicative competence, and they felt that these skills had deteriorated since their third year of university education as English courses were not offered for the third year and fourth year students.

37 out of 40 participants stated that they were disappointed that Taiwanese university students had limited opportunities to develop communicative competence, with large-sized classes and minimal teaching hours identified as contributing causes for this situation. Participants explained that their extremely weak listening and speaking skills

could not be improved with the contact hours provided; usually two or three hours a week of English classes. The data indicated that there were usually 13 hours of English classes per week in high school but these were reduced to two or three hours a week at university. Most of my student and employee participants stated that they attended English courses for two hours a week and eighteen weeks a semester, and only in their first and second year of tertiary study. The fourth year students claimed that despite these two years of English language classes, they were still unable to communicate in English when in their fourth year of university.

Fourth year student 04 commented that few courses were provided at university: *'My university required me to take English classes in the first and second years. I could not have extra English courses in the third and fourth years. I almost forgot how to speak English now'*. The fourth year student 01 explained that it was not possible to improve listening and speaking skills in the contact hours provided in the first two years of university: *'I had English class for two hours a week for two years, and improved a little listening and speaking, but not much as I didn't have chance to talk in English after classes'*.

### **Learning Motivation**

According to the students interviewed as part of this research, a lack of communicative learning created a situation in which they have the desire to learn but are unable to

speaking. Fourth year student 05 explained: *'I can comprehend the speakers' conversation but I cannot utter a complete sentence when I have to speak English. At school, I was trained to read silently so I don't know how to pronounce or how to make sentences'*. With low motivation to create language, the learners were not able to develop their communicative competence. The majority of participants expressed their strong desire to boost their communicative competence but they said that they had failed to do so.

According to the fourth year ESP students, without opportunities to practice the communicative use of English in class, learners had gradually become accustomed to listening without expressing their viewpoints on the content. The long-term use of the sit-and-listen approach had meant that the students had suppressed their motivation to communicate. 28 out of 40 interviewees stressed they were trained to keep silent since they had started to learn English. It seemed that these language learners had been discouraged to express their thoughts or inquire about others' opinions. After they had learnt English for approximately ten years, their ability to use English for 'real world' purposes was minimal, and very few students associated English with communicative functions such as giving opinions. According to the student interviewees, gradually their motivation toward communication diminished.

Accordingly, students reported conceiving of English language learning as a purely academic endeavour rather than a means for communicating in meaningful, 'real world' contexts. The student interviewees advised: *'my learning motivation is getting lower and lower as I never use English to communicate but to have endless test'*, 'I

*think English learning is a course, not for learning communication’, and ‘I feel like learning English is similar to learning chemistry, as teachers remind us to gain high score, not to use it for speaking or listening’.*

In addition, the student interviewees stated that they expected their English language education at the tertiary level would help them to develop autonomous learning strategies to sustain their English learning. Aside from limited contact hours for English education at university, students attributed their disappointing communicative competence to insufficient autonomous learning strategies. These students wanted to sustain their learning and suggested that English teachers could help students develop independent learning strategies so that students could learn English outside of the classroom or after finishing their English education at university. Fourth year students in particular, claimed independent learning strategies were not sufficiently emphasized in Taiwanese universities. The promotion of autonomy will be addressed in chapter six.

Fourth year student 01 reflected on his experiences with independent learning: *‘I used to talk to myself in English as I could not find partners to use English. But I gave up, because it is not helpful for my listening. And my speaking is not improving much as I only use few vocabulary. I hope I have learned more learning strategies.’* In fact, most first and fourth year students revealed the lack of independent learning strategies caused low motivation for English language learning. Similar learner reluctance to communicate using the foreign language has been identified in research regarding Japanese students (Murakami, Valvona & Broudy, 2012). According to the survey by

Murakami, Valvona and Broudy (2012), Japanese university students had low motivation to engage in oral communication using English but found that regular self and peer-assessment significantly increased learner motivation and confidence.

Fortunately, some first year student participants in my study also demonstrated their autonomy of learning and shared their positive experiences taking ownership of their own progress toward English language proficiency. For example, first year student 05 was satisfied with her learning outcome: *'My English teacher in high school often shared her study life in other country and her teaching materials were very interesting, not only textbooks. And I was encouraged to write about my opinions after watching a movie or reading news. Since then, I sometimes watch CNN news and listen to radios to improve my English.'* According to the opinions of the second, third and fourth stages, those who were capable of learning by themselves encountered success in English language education at university; whereas those with weak independent learning skills found university instruction to be inadequate.

The theme of Taiwanese ESP education being mostly based on grammar translation approaches is consistent with Chern's (2010) results, which indicated that most teachers in Taiwanese universities were still in favour of grammar translation rather than communicative teaching practices. As can be seen in the student statements quoted here, a variety of reasons for this adoption of more traditional teacher centred approaches were identified by my research participants, including issues of class size, contact hours, and student confidence.

## Learning English for Entry to University

The student participants' assertions that English language learning in Taiwan is focused on good grades rather than the development of communicative competence are perhaps unsurprising given the prestige associated with entering reputable high schools and universities in Taiwan. English education has become an important means of entry to such schools, and accordingly, parents and teachers focus on student grades rather than the attainment of communicative competence. 37 out of 40 participants identified this use of English as a gatekeeping device: *'the goal of English learning is to enter the most famous university, my teachers said that, my parents said that, too', 'endless tests in my life is for entering a best high school and a best university', 'my parents or my neighbours often asked me 'how is your score', but never asked me 'can you communicate in English', and 'it's very sad, having endless tests for entering a good school is more important than learning communication'.*

According to student interviewees, teachers and parents understand English education to be a means of gaining good grades rather than a communicative vehicle for daily meaning making. Parental expectations regarding the reason for learning English were significant in shaping students' experiences. For example, first year student 06 enjoyed reading novels in English, but stopped this activity as she was not supported by her parents. Her parents expected that she spent time preparing for tests instead of enjoying reading. First year student 04 explained that his low motivation for English

language learning resulted from his high school education: *“English learning in high school was dreadful. Most teachers were very keen on anticipating the trends of exams (for university entrance) and gave us lots of homework and almost daily tests. I feel my motivation to learn had been murdered.”*

As such, student participant input in this research indicates a paradigm shift in the understanding of the purpose for language learning. Students themselves were aware of the societal expectations regarding the attainment of good grades in English but also expressed the view that such achievements did not necessarily lead to fluency in the language. Perhaps students’ awareness of a conflict in societal priorities and ‘real world’ language needs reflects the increasing presence of English as a global language and an understanding of the growing requirement of English proficiency for employment purposes.

Further, the interviewees expressed frustration with assessment practices that emphasised grammatical accuracy and did not incorporate communicative competence. Most students claimed that complained that paper-and-pen tests did not help them improve their proficiency. First year student 01 stated with frustration: *‘I needed to take paper-and-pen tests weekly. The tests were endless but I can’t understand what people talk in English’*. Most of the student participants were worried that they would not graduate because they were not confident to reach the necessary English proficiency level.

## Attitudes towards the English Language

12 out of 20 student participants stated that they were required to memorize 7,000 items of vocabulary in order to prepare for university entrance examinations. Yet, these same participants claimed they were unable to speak or listen in English and they had significant fears about using the language in public. As one student described: *'I am so afraid to be asked questions in English as my listening is so bad, I cannot speak either'*. The fear associated with using English in public was a key theme expressed in the interviews. As with the engineering and business employees, the first and fourth year ESP students described significant anxiety when required to use English for communicative purposes and within intercultural contexts.

Whilst certificates of proficiency were considered important for graduation and job opportunities, most participants stated that they tended to avoid assessments that involved communicative activities, such as oral tests. For example, the General English Proficiency Test (GEPT) and TOEIC exclude face-to-face oral tests or integrated study skills, so these two assessments were most popular with the student and employee interviewees. Some students and employees explained that they did not elect to sit the IELTS examination because this test requires face-to-face communication. According to the student participants, TOEFL tests are the most difficult examinations as integrated skills are assessed. TOEFL tests include essay writing by integrating written and voice texts, in order to assess test takers' understanding, analysis, and synthesising abilities

in English (TOEFL iBT, 2015). TOEFL tests are intended to assess both the proficiency and the communicative competence of the test taker.

Most students and employee participants advised that they did not have the confidence to take the TOEFL test as they could neither remember the content of voice texts nor write academic essays. Another challenge of the TOEFL test related to the independent essay writing, which requires test takers to write a two hundred word academic essay. According to most of the interviewees, the majority of Taiwanese learners lack the ability to give opinions in written and spoken forms so they lack the confidence to undertake communicative assessments such as the TOEFL examination.

The interviews also revealed that students experienced the most anxiety when having to use English for intercultural communication. In this situation, students reported remaining silent and appearing apathetic to their interlocutor. The students explained that this silence resulted from fear rather than disinterest. 45 references from my data indicated that Taiwanese people have inadequate intercultural communicative competence (ICC).

However, my data also showed that despite the anxiety associated with using English in intercultural settings, many participants desired to gain employment internationally and therefore showed enthusiasm for increasing their intercultural communicative competence. According to the interview findings, 28 out of 40 participants strongly

desired intercultural communicative competence in English and expressed an awareness of its importance to their proficiency.

In fact, all students identified the value of ICC. Those who planned to work in Taiwan emphasized expanding their ICC as preparation for the workforce. Those who sought to be expatriated overseas stated that ICC was also a core learning goal. Fourth year student 03 shared his ideal job: *'I envy those who gained job positions or permits of overseas study. My cousin's English is very good and he got a job in America not long after he graduated. I plan to follow him so I am studying (English) hard. That is my dream job! I hope I can do it someday.'* This data implied that the increasing prevalence of international staffing had encouraged students to improve ICC. Several student participants also stated that their friends, family, and supervisors had inspired them to work overseas.

## **5.2 Students' Perceptions of Gaps in ESP Education**

When asked about the English language skills required for successful employment in the engineering and business industries, most of the fourth year students, but not the first year students, emphasised the importance of report writing skills. Significantly, these student interviewees also stated that academic paper and professional report writing skills were not taught in university, including essays, business emails or project proposal writing. Therefore, they felt frustrated when they needed to write emails in

English when applying for jobs or entry to higher education in Taiwan and overseas. Apparently, by fourth year, ESP students began to realise that English education is not merely a course requirement but is related to the employment and academic success.

This could be seen in the data provided by fourth year student 02: *'Before, I thought I was successful in learning English as I often gained good grades of courses. Now, I am worried about my communicative competence. In reality, I cannot use English in the workforce'*. Similar to the opinions of the first year students, the fourth year students complained that little communicative activities were incorporated into their education and they had limited opportunities to practice communication. The students feared that this would leave them unprepared for their future professions.

In terms of the English language skills and knowledge that would be needed to function successfully in their chosen professions, the first and fourth year ESP students showed varying degrees of awareness. As mentioned earlier in this chapter, by fourth year, students were beginning to recognise the need for English language proficiency as extending beyond course requirements, to being an essential component of professional life. However, both the first and second stagers (the first and fourth year ESP students) discussed English language requirements for employment in general terms. Students referred to broad notions of 'communication' or language fluency 'for employment'. This is in contrast to the third and fourth stagers' (employees in the engineering and business industries) description of specific linguistic and pragmatic requirements relevant to their employment. As mentioned in chapter four, students'

lack of awareness regarding the English language needs of the business and engineering workplaces may be explained by their lack of exposure to the professional context.

However, given the stated intention of ESP education to prepare students for their future workplace and use of English for employment, student interviewees' uncertainty regarding language requirements of the professional context was a surprising finding of the study. In terms of understanding the degree to which ESP courses at university are currently preparing graduates for the workplace, this important finding suggests learner needs are not being met. If target domain uses of English were a key component of the ESP curriculum, student interviewees would presumably have a better insight into the specific skills and knowledge they will require for their professions.

In order to verify whether student perceptions of the ESP curriculum as lacking attention to the professional domain, I examined a range of textbooks accompanying ESP courses undertaken by student participants in the study. This analysis revealed that the textbooks used in Taiwanese ESP classes are often focused on listening to sample conversations containing with oversimplified dialogue rather than authentic negotiation. For example, one textbook provided a sample telephone conversation accompanied by a gap-fill task with focus questions such as 'what is purpose of the customer?' (see Barnard & Cady, 2009; Hollett, 2006). Some textbooks explicitly addressed negotiations as a unit of study and provided sample conversations regarding

bargaining and confirming agreements (Sweeney, 2000). However, these exercises were also accompanied by post-listening gap-fill and role playing tasks to practice speaking (Sweeney, 2000). Significantly, these textbook activities did not approximate the complex, culturally dependent, and urgent nature of negotiations in the engineering and business workplaces, as described in chapter four.

Therefore, whilst business employees in particular, emphasised the indispensable nature of negotiation skills for success in the professional domain, current first and fourth year ESP students did not perceive their education to have addressed these important skills. Further, the textbooks – which often function as quasi-syllabi in Taiwanese EFL contexts – did not allow for the experience of authentic negotiation in the classroom. Current business employees also expressed disappointment that they had not been taught negotiation skills in English as part of their tertiary training.

Nonetheless, it is essential to consider whether it is ever possible to replicate the complexity and urgency of professional language in order to provide authentic experiences with English in classroom teaching and learning. As mentioned in chapter two, this question of authenticity within the classroom environment is a point of debate in language teaching circles (see Halliday, 1989; Kramsch, 1993; Widdowson, 2004). Chapter six will discuss possible solutions for bridging the gap between communication within the classroom and the complexity and urgency of language use in the engineering and business workplaces.

In addition to a lack of communicative competence, student interviewees identified a lack of ICC as another challenge. Most engineering and business participants perceived that they had weak International Communicative Competence (ICC) and expected that these skills and knowledge should have been developed in university ESP courses. However whilst both first and fourth year student interviewees perceived ICC to be a major element of language proficiency, they claimed that these skills were not a focus of ESP courses.

Likewise, Engineering English students were not aware of the importance of Team-Oriented Problem Solving (TOPS) skills to their future profession. Interviewees claimed their ESP classes did not include reference to this model and the various linguistic skills required to work through the key phases. Of significance, the engineering employees disclosed that these skills were also not included in their ESP courses, despite their importance for daily survival in the workplace. Therefore, according to student interviewees, there is a significant gap between the language learnt in the ESP classroom and the authentic professional use.

### **5.3 The Need for English for Academic Purposes (EAP)**

Another key theme to emerge from the data was that students felt they needed a greater knowledge of academic English – i.e. cognitive academic language proficiency

(CALP) (Biggs, 1984). Most student participants considered they had weak study skills, including note taking and skills for questioning and answering (Q&A) in group discussion. Whilst EAP is the cornerstone of ESP curricula in many countries, EAP courses seem to receive little attention in Taiwan. If Taiwanese learners are not proficient in the four macro-skills, it is understandable that they have difficulties mastering these academic skills in English. According to most of the student and employee participants, Taiwanese students rarely had explicit instruction in note taking skills, listening skills for lectures, and Q&A discussion skills. English for academic purposes (EAP), thus appears to be a necessary area for expansion in Taiwanese ESP university education.

Indeed, fourth year students recognized that they needed advanced language skills to learn specific subjects as they encountered an increasingly internationalized environment in the university. By fourth year, the interviewees had a good understanding of the fact that language needs are not merely related to listening or speaking skills but are also essential for academic and professional purposes. For example, some fourth year engineering students discussed how learning chemistry in an English-medium course involved academic skills. Student participants found they encountered difficulties with note taking due to poor listening and reading skills. Further, instead of writing notes on the blackboard, professors in various disciplines applied computer aids with presentation slides to accelerate the process of teaching. Students reported encountering difficulties comprehending charts, theories or formulas written in English, and taking notes, digesting knowledge, and identifying the

main ideas of lectures in order to learn subjects efficiently. Student interviewees were unable to explicitly describe the macro and/or micro skills required for these tasks and reported having not been instructed in these functions. According to most of the student participants, English-medium learning was the biggest challenge they faced following high school.

This requirement for greater EAP support was a major finding of the research. Whilst the study intended to investigate two areas of ESP: EE and BE, the area of EAP was identified as a main requirement for students. Whilst interviewees did not explicitly refer to the need for EAP, the difficulties they described indicated that EAP courses should be provided as a foundation for students before undertaking ESP courses for professional preparation. When I proposed this idea to student interviewees in this study, every single individual agreed that EAP should be a pre-requisite for ESP education in Taiwan.

The value of EAP has been emphasised by many educators (Hyland & Milton, 1997; Jordan, 1997; Flowerdew & Peacock, 2001; Hyland & Hamp-Lyons, 2002; Evans & Green, 2007). Hyland and Milton (1997) recommends that EAP instruction can reinforce academic achievement in an English-medium academic setting. Hyland and Hamp-Lyons (2002) also argue that EAP courses should be provided to assist students with general academic language skills in addition to teaching the specific language skills necessary to prepare students for entering the professional workforce. For example, in Taiwan, research into medical students' English language learning

experiences revealed that first year students were most in need of academic reading skills, whilst the senior students needed the most assistance with listening skills (Chia, Johnson, Chia, & Olive, 1999). English for Academic Purposes (EAP) was therefore implemented to assist these medical students to learn in an English medium of instruction environment.

Likewise, Evans and Green (2007) conducted research in Hong Kong regarding first year students' EAP needs. By surveying almost 5,000 undergraduate students from 26 departments in one university, Evans and Greens (2007) found that the EAP goals for the first year students should include an understanding of academic discourse and key academic genres. Further, Lepetit and Cichocki (2002) have argued that academic language support must be provided for health science majors in order to assist with academic tasks such as oral presentations and knowledge of key text types. Chapter six will contain my recommendations for integrating EAP instruction to ESP courses in Taiwan.

#### **5.4 The Way Forward: Guiding Principles to Prepare Learners for Language Use in the Workplace**

As discussed throughout this thesis, an adequate ESP education should help learners become familiar with the use of English in their future workplace, in order to improve student motivation and communicative competence. In order to help learners become familiar with language use in the workforce, it is feasible to adopt or adapt the theory

of Simulations in Language Teaching by Jones (1982), who argues that language learning must involve authentic thoughts and behaviours, not merely the language itself, and suggests that student motivation can be increased by engaging simulations in the classroom. Jones (1982) explains that language learners can understand the functions of language and use English to discuss, analyze, and argue with others to defend their stance in simulated scenarios that mirror the use of language in 'real world' situations. If the sit-and-listen learning in Taiwan can be replaced by simulations and authenticity-oriented learning, it is more likely that Taiwanese people can be equipped with better Intercultural Communicative Competence (ICC).

Practice-based learning proposed by Barrow (1994) also provides a concrete means of preparing students for the language requirements of the workplace. As revealed in this study, the paper-test-oriented English education of Taiwan has led to grammar focused teaching and learning with minimal attention to the pragmatic elements of communication. In contrast, practice based learning, which has been successfully applied in medical training courses, requires the instructor to provide 'problem boxes' to allow for communicative practice related to 'real life' situations. 'Problem boxes' contain situations that have happened to doctors, nurses, and patients and these problems can provide opportunities for learners to practice using English to reach suitable resolutions (Barrows, 1988). Extending this notion to apply to the preparation of engineering and business students for the workforce, may allow for the inclusion of what Barrows (1994, p.5) terms being 'humane' as a key element of ESP courses.

The concept of being humane relates to using language for meaningful, genuine communicative purposes (Barrows, 1994). This may enable Taiwanese ESP courses to focus on interpretative procedures and interpersonal communication as key functions in the target language. In interpretative procedures, communicators may share their thoughts and need to be sensitive to their counterparts' values, considerations and cultural background. On the contrary, the students who learn English with merely sit-and-listen approaches cannot communicate adequately as they are not sensitive to their counterparts' values or specific cultural background. Namely, if ESP learners can have a better understanding of how language is used in the authentic context, they are more likely to be prepared for future employment. For example, as was discussed in chapter four, Team-Oriented Problem Solving (TOPS) skills are key elements of communication among engineers. Hence, ESP for engineering courses must integrate TOPS into meaningful and authentic classroom instruction and communication.

### **5.5 Summary of Chapter Five: Student Perceptions of ESP Education in Taiwan**

A lack of opportunities for communicative language practice was a key theme expressed in interviews with first and fourth year students. According to the findings, there is a prevailing view in Taiwanese society that the purpose for studying language is to gain good grades rather than to learning to communicate. Many student interviewees suggested that this grade-oriented view is hindering Taiwanese learners from developing communicative competence. Interviewees also expressed a strong

sense of frustration and disappointment regarding this lack of emphasis on English as a means for authentic and 'real world' communication.

Further, the student interviewees identified a lack of communicative proficiency particularly in speaking and listening, and inadequate Intercultural Communicative Competence (ICC) as the main weaknesses in their English capabilities. By comparing the experiences of leader and entry/mid level employees and current ESP students, it can be seen that the communicative competence of Taiwanese learners has not increasingly significantly in decades. Further, Taiwanese learners continue to experience significant anxiety when communicating with foreigners.

The use of traditional grammar translation approaches was identified as partly responsible for this situation. Minimal communicative practice with the language gradually decreased student motivation to express opinions and accordingly confidence to communicate deteriorated. Interviews with first and fourth year students also identified large-sized classes and restricted hours of instruction as chief obstacles to the implementation of CLT approaches in Taiwanese ESP classes.

The need for greater attention to the target domain in ESP was a chief finding of interviews with students and my analysis of typical learning materials. Importantly, the necessity of addressing the use of workplace language in its true complexity and

urgency was also identified. EAP also emerged from the data as one of the main requirements for providing support to ESP students learning their discipline in English.

The findings regarding the neglect of communicative teaching and learning in Taiwanese EPS courses are consistent with the research outcomes of several other studies (see Chern, 2010; Liou, 2004) that indicate that most Taiwanese universities still have the preference to teach reading skills rather than communicative competence. However, in contrast to existing findings, my data revealed a paradox: the ESP student interviewees had lost motivation for learning English and encountered a significant degree of anxiety when attempting to communicate in intercultural settings, however they still expressed a desire to live and work in English speaking contexts and to improve their ICC and general communicative competence. This paradox is one of the original findings of my study and suggests the need for greater encouragement of communication in the Taiwanese ESP classroom.

## **Chapter Six**

### **A Framework for Preparing ESP Students for the Linguistic Demands of the Workplace**

This chapter will discuss the implications of my taxonomy of language use in the engineering and business workplaces – a unique feature of my research – for broader understandings of Needs Analysis and curriculum design in ESP. This chapter will also recommend options for improving ESP in Taiwan by presenting a three-fold curriculum, which includes foundation and advanced EE and BE courses. The purpose of the foundation courses is to provide students with a basic understanding of EAP skills to prepare them for tertiary study in English. Advanced courses aim to provide communicative classroom language learning, address the development of ICC, and introduce students to the specific uses of language in the workforce. An internship component is also proposed as a means of providing students with ‘real world’ experience regarding the use of English for professional purposes. Finally, future research initiatives will be proposed.

#### **6.1 The Role of Authenticity: Theory into Practice**

As discussed in earlier chapters, the notion of authenticity has been well documented by Widdowson (1978, 2004) and Kramsch (1993, 1998). My research has taken this concept of authenticity and applied it to ESP education in Taiwan by providing a

snapshot of language users' perceptions of English language use in the engineering and business professions. As shown in chapter four, my interview data has allowed me to produce a taxonomy of language requirements for the engineering and business workplaces, incorporating six elements: routine tasks, TOPS, negotiation skills, soft skills, hard skills and ICC. These six elements overlap and are interdependent.

Importantly, my research has also identified the affective experiences and perceptions of Taiwanese language users, including their frustrations regarding attempts to increase communicative competence, their suggestions for improving language learning at university, and their professional aspirations and anxieties regarding ICC. My taxonomy of language use in the engineering and business contexts complements existing research on language needs by providing specific and context rich data regarding linguistic skills and affective elements. The research participants in my study provided 40 authentic, dynamic, genuine stories of language learning and use for professional purposes.

Accordingly, my research takes general ideas about ESP students' needs and verifies these via in-depth interviews with speakers who use the language in 'real world' contexts. By analysing participants' data, I have been able to understand the inner voices of English users – their motivations and their fears – and the use of the language in authentic contexts, instead of listing discrete, decontextualized tasks. The engineer participants identified communication for TOPS within international contexts as the

chief use of English in the workplace. Business participants identified win-win negotiation within a multicultural market as the most important use of language.

As discussed in chapter two, the concept of authenticity has become a key principle of ESP education in international contexts. Some educators advocate the use of authentic texts (Donna, 2000; Yeh, 2013), whereas Widdowson (1978, 2004) and Kramsch (1993, 1998) remind teachers that authentic language learning involves 'real world' interaction with interlocutors and with texts in particular contexts, including different socio-cultural circumstances. I applied the concept of authenticity to my research methodology in order to examine the context of language use as perceived by students and employees. Beyond the level of texts or tasks, my data analysis also enables an understanding of the specific needs and difficulties of Taiwanese learners and employees in real world contexts and cultural domains.

My methodology provided me with two advantages: in-depth, face-to-face interviews, and the ability to record each interaction. Kaewpet's (2009) ground-breaking research used software and recorded interviews but did not utilise face-to-face interactions. As such, Kaewpet's (2009) participants did not interact with an interviewer, and this may have limited the researcher's ability to elicit further information, elaborations, and feelings regarding English language learning. In contrast, the face-to-face techniques I employed provided me the time and opportunity to ask interviewees about repeated key words, to interpret their body language, and request clarification.

Further, whilst, Spence and Liu (2013) adopted face-to-face techniques and recorded interviews with handwritten notes, their interviewees did not allow them to record sessions due to concerns regarding confidentiality. Without repeatedly listening to interview records, it may have been difficult for the researchers to recall or re-examine participants' input. Fortunately, my participants provided their consent to have interviews recorded so I was able to transcribe the interviews and establish a database in NVivo. As discussed in chapters three and four, NVivo has facilitated my data analysis in terms of setting up the classification of nodes and allowing for the discovery of inter-relationships among key themes.

In addition, as reviewed in chapter two, the existing literature in BE and EE ESP education in the Taiwanese context stresses the perceptions of teachers and students (Huang, 1997; Chen, Wu, & Yang, 2001; Chen & Wu, 2010; Lin, Wu, & Huang, 2013; Su, 2005; Tsao, Wei, & Fang, 2008). Without investigating the business and engineering workplaces, it is unlikely that a deep understanding of language use in authentic contexts can be attained. As such, my study has focused on investigating these 'real world' settings in an attempt to complement existing research and contribute to professional understanding of requirements for ESP courses.

I appreciate the support of my participants and the inspiration from those educators who advocate the concept of authenticity, including Widdowson (1978, 2004) and

Kramersch (1993, 1998). I have put the theory of authenticity into practice in two aspects: my methodology and my framework for ESP curriculum design. Next, I will apply my findings to propose an ESP curriculum to ensure that students are adequately prepared for the specific linguistic requirements of the workplace.

## **6.2 Preparing ESP Students for the Linguistic Demands of the Workplace**

As discussed in chapter five, my findings have identified the need for EAP as the cornerstone of all ESP curricula. However, currently EAP courses are not emphasized in Taiwanese universities. EAP instruction can facilitate study skills and promote communicative competence for Taiwanese learners who rarely use English in their daily lives. According to my interview participants, if all learners undertake EAP courses before they attend ESP courses, they would be more likely to reach higher standards of academic achievement in English as a medium-of-instruction courses. Furthermore, if they can acquire greater specialist knowledge in discipline subjects by acquiring EAP skills, they are more likely to succeed in their professional learning. Hence, this research proposes a framework for enhancing ESP graduate preparedness that emphasizes EAP within the first stage of the ESP curricula.

After students improve their EAP skills and knowledge, I suggest that the second stage of the ESP curriculum should provide an understanding of the taxonomy of English language requirements for survival in the business and engineering contexts. A

surprising finding of my study was the degree of uncertainty that characterised the stage one and two groups' responses regarding the workplace uses of English. As was shown in chapter five, this student uncertainty resulted from the failure to address target domain uses of English in ESP education in Taiwan. According to student interviewees, this lack of attention to workplace uses of English in the ESP classroom stemmed from the examination oriented education system and the restricted hours of instruction allocated for ESP.

Accordingly, the second stage of my proposed curriculum intends to introduce the taxonomy of language use in the business and engineering workplaces, in addition to authentic texts. As discussed in previous chapters, routine tasks, TOPS, negotiation skills, soft skills, hard skills, and ICC have been identified by interviewees as the main tasks requiring English language skills in the context of engineering and business workplaces. I suggest that ESP researchers and teachers continue to maintain and update the taxonomies of language use in these workplaces. With the concerted efforts of teachers and subject specialists, ESP learners will therefore be able to explore and practice professional uses of English via authentic case studies and projects applying the concepts of TOPS, win-win negotiation, and ICC.

The third stage of the proposed ESP curriculum contains an internship component for hands-on practice within an authentic context. This stage of the curriculum requires the most support and collaboration between the pedagogical setting of the university and experts within the industries. Industry specialists may provide authentic case

studies and workplace experiences for internship. This cross-setting ESP learning may bring mutual benefits for both universities and industries. When both educational and professional settings are willing to innovate instruction to enable ESP learners to undertake supervised, carefully structured internships, there is hope to cultivate workplace ready, communicatively competent graduates. Before I reflect on potential obstacles to such collaboration between the educational and occupational setting, I will revisit the outcomes of the NA for the participants in this study (see Table 6.1).

	Lack	Needs	Wants	Solutions
EAP	Lack of CLT	Need communicative abilities to cope with specific demands of academic life	Comprehension of English language textbooks and lectures	Promoting autonomy
	Lack of autonomy			Enhancing study skills
				Note taking skills
	Weak study skills			Presentation skills
			Student exchange	Q/A skills
	Intercultural teamwork skills			
Critical thinking skills				
EE	Weak four skills	TOPS	International recruitment	Enhancing the four skills
	Weak communicative competence within the context of international teamwork			Immersing learners in the engineering workforce

	Need for English language to undertake problem solving skills in engineering areas	Simultaneous communication with multiple interlocutors within multicultural contexts via multiple channels, e.g. Conference calls, Skype, telephone calls, email	Job Promotions	Internship with scaffolding
BE	Weak four skills	Lack of experience negotiating with international clients and colleagues via multiple channels, e.g. Conference calls, Skype, telephone calls, email	International recruitment	Enhancing four skills
	Weak negotiation skills		Job promotions	Immersing learners in the business workforce
	Weak communicative competence within the context of international teamwork			Internship with scaffolding

**Table 6.1 Needs and proposed solutions for ESP interviewees**

### **6.3 A Three-fold ESP Curricula for Taiwanese ESP Instruction**

#### **The First Stage: EAP-Oriented Foundation Courses**

In addition to the language requirements of the workforce, Taiwanese learner participants in this study identified the need for academic language skills in English. To meet the needs of Taiwanese university students as articulated by participants, a framework of the first stage of ESP curricula has been shaped around EAP instruction. The first stage of the curriculum is therefore designed to provide general academic language guidance for university students who lack cognitive academic language proficiency, including listening, speaking, reading and writing skills.

My proposed EAP-oriented foundation courses aim to meet two major needs: cultivating proficiency and expanding study skills. Two semesters are dedicated to achieving these aims. Specific objectives for the first semester include helping students understand daily conversation in English, the pragmatic purposes of small talk, and academic reading and writing skills. The findings of my research also revealed that the students who lack academic language proficiency were likely to have other weak skills, including weak ICC, a lack of autonomous language learning strategies, and inefficient study skills. The first semester – an 18-week block of lessons – will focus on building up students' ICC and autonomous language learning skills. The second semester – also an 18-week block of lessons – will emphasize English for Academic Purposes (EAP).

An important part of this first stage – and indeed the entire ESP curriculum – is related to the encouragement of autonomous language learning strategies. As shown in

chapter four, most employee participants who studied English in the 1980s, 1990s, and early 2000s said that they were frustrated by their education because they were not instructed in independent learning strategies. Unfortunately, most first year and fourth year student participants who studied English in 2010s also reported feeling helpless and confused when trying to improve their communicative competence outside of the classroom. Further, the student interviewees stated that their lack of independent learning strategies was a chief cause of their low motivation for language learning.

This would indicate that explicit attention to learner autonomy in language acquisition would be a beneficial feature of ESP curricula. Autonomy involves behavioural and emotional engagement by promoting three aspects, including academic self-efficacy, expectancy for success, and academic self-concept (Mih & Mih, 2013). However, importantly, the interview data also revealed the need for these autonomous learning strategies to be modeled carefully in the classroom in a non-threatening learning environment.

A learning environment to encourage autonomous language skills will require a shift in the understanding of the purpose of English language learning from the test-oriented culture that was revealed in student interviews and discussed in chapter five. Learners reported a tendency to avoid starting conversations and making mistakes so they usually kept silent when in English-language speaking environments. In the long run, these learners were too uncomfortable and lacking in confidence to use English, including for the purposes of writing and speaking. Therefore, it is necessary to build

Taiwanese learners' confidence and autonomy in order to promote behavioural and emotional engagement with ESP education.

According to Mih and Mih (2013), low self-concept refers to how the individual perceives the experience of herself or himself in an academic or social setting. According to research (Shavelson & Bolus, 1982; Wigfield & Karpathian, 1991), high academic self-concept impacts positively on academic achievement. However, in terms of English education in Taiwan, all four participant groups in this research, including university students and employees, indicated that most Taiwanese had low self-concept when learning English. Interviewees indicated that self-efficacy in their English language learning was much lower than in other subjects. Most students and employees seemed to have learnt English reluctantly and with a great deal of anxiety and self-consciousness.

Further, in spite of the flourishing of computer-aided learning tools and language schools in Taiwan, the interviewees in this study lacked self-efficacy. Self-efficacy refers to future-oriented plans and strategies toward success (Bong & Skaalvik, 2003; Marsh & Hau, 2003). The individual with high self-efficacy makes efforts to sharpen his or her skills with sound engagement and application of effective learning strategies. According to my interviews, few participants had applied social strategies to practice English with peers or metacognitive strategies to manage time or develop learning strategies. The resolution of such issues will require a shift in English education in Taiwanese universities from an emphasis on selecting correct answers in examinations

to promoting academic self-efficacy, from grade-oriented to communicative competence oriented, and from behavioural engagement to both emotional and behavioural engagement with language learning.

According to Oxford (1990), there are six main strategies for autonomy in language learning; memory, cognitive, metacognitive, compensation, affective and social. Memory denotes the strategies used to remember what one has learnt; cognitive strategies relate to the ability to apply what one has learnt; metacognitive strategies relate to the self-efficacy regarding learning; compensation refers to the employment of strategies to bridge gaps in knowledge, the affective element relates to self-awareness in reducing anxiety when using English; and social strategies denotes learning with others in daily life. Among these strategies, a lack of cognitive, metacognitive, and social strategies in English language learning have been identified in interviews as central problems for Taiwanese learners.

For example, few Taiwanese students used English with friends and/or outside of the classroom. Inside the classroom, most Taiwanese student interviewees reported passively recording what teachers wrote on board but were reluctant to participate in conversational pair work with partners in class. This indicates that these learners do not use high-level cognitive strategies and had little metacognitive awareness. Instead, students' tended to wait for learning solutions and language answers to be provided by teachers rather than to resolve their own issues. However, metacognitive strategies have been proven to be key to language proficiency (Mullins, 1992). For instance, 110

EFL students in Thailand participated in research that focused on encouraging metacognition and the learning outcomes demonstrated a positive impact on their English language proficiency (Mullins, 1992).

However, large class sizes in Taiwan can render the promotion of learner autonomy incredibly difficult. As described by interviewees, there are generally fifty students per class in Taiwanese universities so teachers require advanced time management strategies to check student attendance and promote engagement in one or two-hour lessons. Of course, attendance and engagement can be very different issues in language learning. Attendance refers to the physical presence of a student whereas engagement relates to the emotional and behavioural aspects of learning discussed previously. With limited contact time of fifty minute lessons, two or three hours a week, it is difficult to check attendance and almost impossible to monitor learner engagement.

One way to make the monitoring of student engagement more manageable for classroom teachers is to separate a class into several teams, and assign a team leader for each group. Each team will be assigned a communicative task in order to create ample opportunities for communication among team members – in much the same way as engineers engage in TOPS processes or business colleagues participate in team negotiation. Task outcomes might include team presentations or team proposal writing. When team members engage in frequent communication in order to complete

communicative tasks, they may establish rapport and friendships, thus providing a social context for English language use.

However, physical attendance does not guarantee true engagement with learning, so it is necessary to develop teaching strategies to encourage student engagement. In order to increase academic self-efficacy, expectations for success, and positive academic self-concept, an English instructor should be willing to create a non-threatening learning environment in which the teacher remembers students' names and expresses genuine interest in learner opinions and contributions to the class. The atmosphere of communication should be friendly and encouraging, with activities characterised by interaction and spontaneous communication in the target language.

According to interviewees, limited exposure to CLT in high schools and in universities also results in students lacking the confidence to use English. As shown in chapter one, EFL research and Taiwanese Ministry of Education policy upholds the value of CLT approaches for encouraging student communicative competence (Ministry of Education, 2009, 2011b, 2014c). Indeed, EFL research suggests the judicious use of CLT approaches in the university plays a critical role in encouraging students' ICC. Therefore, I suggest foundation ESP courses need to adopt at least some elements of CLT approaches, therefore increasing opportunities for Taiwanese learners to communicate meaningfully in English.

As discussed in chapter two, other researchers who have investigated Taiwanese engineers' use of English in a leading semi-conductor manufacturing facility, identified a range of communication difficulties encountered by employees (Spence & Liu, 2013). These researchers have identified the need for ESP learners to be provided with specific solutions and strategies to overcome language-learning difficulties (Spence & Liu, 2013). Likewise, my research has identified the essential role of communicative competence in preparing ESP students for the realities of language use in the workplace. The three-folded ESP curriculum suggested here, attempts to meet the specific needs of graduates as they enter the engineering and business workforces.

As discussed previously, the importance of EAP courses for student preparation for English-medium instruction has been a prominent theme in the global EFL literature for some time. Jordan (2002) has documented the development of EAP from the first use of the term in Britain in the mid-1970s and its emergence in the United States of America toward the end of the 1970s. The origins of EAP can be traced to language support provided to overseas students attending Birmingham University in the 1960s. According to Jordan (2002), in the very early stages of EAP, most teachers were part-time and the courses took place in the first 4 weeks of semester. Gradually, it was discovered that increasing numbers of students required more than 4 weeks to improve their academic language proficiency and full-time teachers began to be employed.

In order to help EFL international students achieve success in their academic learning, many universities and tertiary institutions have established foundation courses as prerequisites for international study. Further, these foundation courses have been expanded to encompass several courses to cater to learners at various proficiency levels and with particular requirements, such as difficulties with writing or oral language (Jordan, 2002). Many institutions require that students whose English language proficiency is below the established standard for entry, undertake a series of EAP courses before they attend lectures and tutorials in their discipline subjects. Nations with high numbers of international students such as Britain, Australia, and the United States of America, have established EAP courses with the purpose of supporting international students to become accustomed to English language textbooks, teaching methodologies, learning technologies, and academic expectations regarding issues of academic discourse, referencing, study skills, and tutorial participation. Research findings indicate that such attention to academic genres and the anticipation of learning problems are key to encouraging independent English language learners (Jordan, 2002; Beard & Hartley, 1984). Similarly, all groups of participants in this research expressed a desire to 'learn how to learn' English and specialist subject content through the foreign language, as key to achieving academic and professional success.

However, EAP courses have not previously been emphasised in Taiwan and educators in a select few universities have only just begun to establish courses to prepare students for academic life (Chern, 2010). According to Taiwanese university websites,

there are still only a few EAP courses offered for students. For example, according to the website of a leading national university, only two EAP classes are provided each semester, including one thesis writing course and one general EAP class. It is doubtful that such a limited range of EAP course offerings would be able to facilitate much improvement in students' cognitive academic language proficiency. This is particularly so when considering the degree of frustration exhibited by my interviewees regarding their lack of independent learning skills and communicative competence.

Most student participants in this study indicated that they needed to improve study skills, particularly to do with understanding English-medium textbooks and lectures. Study skills have been defined as the perceptive and productive skills by which a learner intends to achieve academic success (Jordan, 1997; Richards, Platt, & Platt, 1992). Perceptive skills include the listening and reading skills that a learner applies to understand lectures and textbooks and further discriminate main ideas and the relationship between these ideas. Productive skills include the speaking and writing skills that a learner applies to demonstrate her or his comprehension of others' opinions and further express her or his own opinions, including comparing ideas, making hypotheses, or formulating theories (Jordan, 1997; Richards et al., 1992). Study skills are required for understanding and participating in lectures, tutorials and seminars, taking notes and writing essays and theses (Jordan, 1997). To improve study skills, a learner develops strategies, techniques and abilities for study purposes, such as enhancing reading speed to comprehend textbooks, understanding graphs, symbols and diagrams as visual representations of text, and note-taking during listening and

reading (Richards et al., 1992). According to the interviewees in this research, study skills such as strategies for note-taking, identifying main ideas and opinions in text, and understanding visual representations of data such as graphs, are barely taught in EFL education in Taiwan. Lack of these essential study skills can result in unsuccessful academic performance and therefore prevent subject specialist knowledge as well as the expansion of English language communicative competence.

Taiwanese students report that note taking in high school EFL classes in the 'sit and listen' approach, involves the teacher analysing the main ideas and writing these points on the blackboard for students to copy. As such, there is very little explicit teaching of academic reading skills. This reflects the system in which the attainment of good grades is paramount and in which teachers are required to transmit important information for success in examinations.

Note-taking in lectures at university is very different to this form of copying (Beard & Hartley, 1984; Bligh, 1972; Brown, 1978; Jordan, 1997; Lynch, 1994). Tertiary level note-taking skills may seem simple but can be challenging for EFL learners. For instance, research by Clerehan (1995) discovered that students studying at university in their first language could record most main ideas presented in a lecture, while students studying in an additional language omit up to 30% of key points. Further, second language learners report difficulty following up lecture information in textbooks and claim they are unable to follow the argument when professors extend the application of theory without visual aids (Clerehan, 1995). These students could

understand 80% of lecture content when the lecture was delivered in Chinese, but less than 50% of content when it was presented in English (Clerehan, 1995). Taiwanese EFL professors usually speak Chinese but present key information on powerpoint slides in English. Student participants in this study expressed their frustration regarding an inability to comprehend lecture content.

In addition to note-taking strategies, skills for participating in group discussions were also identified as a perceived weakness of Taiwanese learners according to all groups of participants in this research. Group discussion skills include the ability to appropriately initiate a discussion, make suggestions, establish group consensus or invite alternative opinions, control the order of discussion, reduce the tension created by arguments, and summarize main ideas in English (Beard & Hartley, 1984; Jordan, 1997; Schmuck & Schmuck, 1971). In this research, student groups indicated that few students actively initiated discussions in class, and employee groups also reported that most engineers and business employees were too timid to participate in English language discussions. These statements show that group discussion should be a central concern of ESP education.

Furthermore, essay writing skills and the process of SWOT needs to be part of ESP curricula in order to prepare business and engineering students for project writing skills necessary for their future employment. As explained in chapter four, SWOT refers to strengths (S), weaknesses (W), opportunities (O) and threats (T), and is a framework for writing in the engineering and business workplaces (Piercy & Giles, 1989). SWOT

skills were identified by engineering and business participants as one of major elements of language use in their workplace. Business employees utilised SWOT to market products, whilst engineer participants utilised this framework for evaluating technology. Accordingly, many of the business and engineer employees suggested that SWOT strategies need to be a central component of BE and EE courses.

In order to apply SWOT to project writing, students firstly need to confirm if their writing content is relevant to the topic or purpose. Secondly, students need to ensure that their main argument has been presented in a thesis statement. Next, students have to provide a balanced overview of different angles or approaches to the topic or question. Fourth, students are required to present a deep discussion of each aspect of the topic or question. Next, students must refine their transitions between the components of the essay and make each paragraph cohesive. Students then need to elaborate on each point of the paper with an example to support their views. Finally, students must ensure they have provided clear citations and avoided plagiarism.

If authentic cases from the business and engineering workplaces can be utilised, students can learn to apply SWOT strategies to written projects, and can develop a good understanding of the English language skills involved. The role of SWOT in a framework of foundation courses is presented below (see Table 6.2). The foundation courses can be offered for two semesters, with each semester consisting of eighteen weeks.

Teaching Resources	Lessons	<p>Objectives:</p> <ul style="list-style-type: none"> <li>a. boost learner autonomy</li> <li>b. enhance CLT</li> <li>c. enrich EAP</li> <li>d. introduce SWOT</li> </ul>
Textbooks	Introduction of ICC and EAP	
	Introduction of varieties of accents	Improve listening comprehension
	Discussion of varieties of cultures	Introduce ICC
	Note taking skills for reading	Facilitate specialist subject studies
	Note taking skills for listening to lectures	Support lecture comprehension
	Essay reading and writing	Improve academic reading and writing
	Discussion of ICC	Raise awareness of ICC
	Demonstration of presentation skills	Equip students with presentation skills

	Introduction of SWOT	Improve critical analysis of products and techniques
Online forum	A platform for discussion	Communication for sharing daily lives and discussing professional issues
Voice record	Authentic communication	Help familiarise students with the context of communication in the workplace in order to reduce anxiety surrounding English language communication
	Communication among friends	
	Intercultural communication	
	Communication between professors and students	
Film	Varieties of intercultural communication	Explore ICC
Assessment	Goals: assess autonomy, ICC and EAP	
a.	Learning diary	Observe quality of learning
b.	Team presentation	Enhance learner autonomy through cooperative learning Enhance presentation skills
c.	Oral tests	Assess oral communicative competence
d.	Note taking skills	Assess note taking skills
e.	Essay reading and writing	Assess integrated reading and writing skills

## **Table 6.2 Framework for Foundation Courses**

After students take foundation ESP courses to boost learner autonomy, enhance communicative confidence, and enrich their study skills in the first stage of the proposed ESP courses, they are required to take the second stage course. The goals of the second stage curriculum are to introduce students to English language use in the professional contexts of the engineering and business workplaces.

### **The Second Stage: an Authentic-Problem-Based-Learning Approach**

An Authentic Problem-Based Learning (APBL) approach is applied in the second and third stages of this curriculum framework for ESP instruction. In Taiwan, Authentic Problem-Based Learning (APBL) has been applied to the education of students studying English for Medical Purposes (EMP), but has not yet been applied to Engineering English or Business English courses (Yeh, 2013). Yeh (2013) advocates that EMP courses should incorporate authentic articles from key journals in the medical field, such as *Scientific American*. Moreover, Yeh (2013) has designed collaborative work projects where students were required to analyse the advantages and disadvantages of diagnostic assessment tools for specific diseases. In much the same way as Yeh's (2013) EMP course was structured around authentic learning experiences, I aim to introduce students to my taxonomy of language uses in the engineering and business workplaces. Moreover, I emphasize simulated practice with authentic texts and in

authentic contexts as key to the learning experience provided. APBL is therefore proposed to support simulated practice by applying ‘real world’ problems that occur in the workforce (See Table 6.3).

	Current ESP education in Taiwan	My framework in this research
Approaches	Content Based Notional-functional Situational Task-Based	APBL approach
		Authenticity of context: authentic communicator, authentic power relations, authentic environment
		Taxonomy of context: ICC, routine tasks, soft, hard and TOPS/negotiation skills
Foci	Receptive skills: listening and reading comprehension	Intercultural Communicative Competence
	Terminology and contents	Context of language use
	Sit-and-listen	Communication interaction and hands-on experience
	Simplified tasks	Authentic project and internship
	Lectures	Learning support through small group work and teacher scaffolding
Assessment	Paper-and-pen test	Project writing and presentation

**Table 6.3 Comparison of Current ESP in Taiwan and My Proposed Framework**

The origins of the Authentic Problem-Based Learning approach can be traced back to McMaster University in Canada in the 1960s (Barrows, 1994). At the time, Barrows (1994) and his colleagues identified the insufficiency of traditional medical education in encouraging student engagement with the authentic practice of medicine. Accordingly, an Authentic Problem-Based Learning (APBL) approach was advocated by Barrows (1994) and his colleagues as a means of encouraging greater learner participation and motivation. The objectives of APBL are to motivate learners by increasing their awareness of the relevance of classroom learning for their future roles in the medical profession. The application of APBL has been extended to other areas of education, such as math instruction and law (Barrows, 1996).

Informed by this method, my research proposes an Authentic Problem-Based Learning (APBL) approach for the second and the third stages of the ESP curriculum framework. This APBL approach aims to equip ESP learners with communicative competence and intercultural awareness in order to prepare them for their specific professions. There are two major objectives of the second stage of the proposed curriculum: to inform learners of the context of language use in the workplace, and to provide simulated practice utilising an APBL approach.

In my opinion, the components of APBL lend themselves to communicative ESP instruction as they allow for self-directed communicative learning, the development of real-world ICC by solving authentic problems, the gradual withdrawal of teacher scaffolding and support, and the use of group work to encourage social interaction.

First, self-directed communicative learning denotes that learners are the centre of education and are responsible for completing projects and presenting learning outcomes by communicating with team members. This mirrors the roles and responsibilities of engineering and business employees in the workplace.

The second component of APBL is to motivate learners to communicate by solving 'real world' problems that frequently occur in the workplace. Such authentic scenarios may be gathered from collaboration with subject area specialists and provided as part of the 'problem box' approach. This approach was initially proposed by Barrows (1994) as a key component of APBL in the medical profession. Originally, 'problem boxes' represented the types of critical incidents or problems that may occur in clinical service (Barrow, 1994). In my proposed framework, 'problem boxes' refers to the scenarios and critical incidents that may occur in the process of using TOPS skills in the engineering workforce and 'win-win' negotiation with clients in the business workforce.

The third component, the theory of scaffolding, is integrated into an ABPL approach to ESP, with the second and third stages of my proposed curriculum providing support and teacher supervision of learner engagement. The notion of scaffolding requires language teachers to play the role of language facilitator rather than to provide answers to students' problems. Whilst the term 'scaffolding' is frequently associated with Vygotsky's work, he did not actually use the word himself (Balaban, 1995). Instead, inspired by Vygotsky, his followers applied the Zone of Proximal Development

theory to educational contexts with socio-cultural aspects (Balaban, 1995). According to Vygotsky (1932), the distance between a novice learner and a competent one is termed the Zone of Proximal Development (ZPD). To reach the ZPD successfully, Vygotsky and other educators emphasize that learners need to have experiences to apply their learning, and the key notion is to advance individual learning by doing (Berk & Winsler, 1995). The ZPD can be applied not only to the learning process but also to the assessment of education. Vygotsky disagrees with testing students' learning outcomes by paper and pen instead insisting that a proper test should gauge a learner's ability to solve problems independently or with guidance (Balaban, 1995). Proponents of this theory suggest that during the process of learning and teaching, scaffolding is the way that the teacher guides student learning through positive interactions and the provision of support. Gradually the guidance will be tapered off and will be ultimately removed when the aid becomes unnecessary, similar to way that scaffolding is utilised during the construction of a house and then detached when it is no longer necessary (Brown & Campione, 1996).

The notion of 'scaffolding' has been used in professional internship curricula, such as nursing internship courses (Baghcheghi, Koohestani, & Rezaei, 2011). In research by Baghcheghi, Koohestani, and Rezaei (2011) nursing students applied their medical knowledge by working in hospitals under the guidance of supervisors. Collaborative learning alongside peers and under the supervision of experienced nurses was provided. Gradually, the input and support of the expert nurses was withdrawn as the students became more accustomed to the requirements of the workplace. Finally, the

scaffolding was removed altogether when the learners proved capable of working independently (Baghcheghi et al., 2011).

Vygotsky's ZPD is a useful framework for improving ESP learner outcomes in Taiwan. According to the findings of this research, the majority of university students complained that paper-and-pen-oriented lectures and assessment in high school had decreased their motivation for English language learning. Drawing inspiration from the ZPD, this research suggests that hands-on experience in the workforce can effectively increase the relevance and efficiency of ESP education at Taiwanese universities. With experience using English in 'real world' professional settings in the context of careful scaffolding of experts, university graduates can be adequately prepared to enter the workplace. In line with Vygotsky's approach, this proposed framework for ESP instruction will also incorporate authentic assessment of learning outcomes.

The fourth component of the APBL approach, the use of group work, requires five or six students to be assigned to a team in order to participate in collaborative learning endeavours. My proposed framework is informed by Barrows (1988) who organizes students who have not previously met to work together in small groups. As students do not know each other when the groups are first formed, they will be motivated to communicate for meaningful purposes in English. They will not be accustomed to the exclusive use of Chinese as they may be with old friends. In a large-sized class, the supervisor can dispatch an experienced or competent leader to assist members with

minor tasks and strengthen the bond between team members. A leader of each small group can be a bridge between team members and the supervisor.

This type of small group learning also has the potential to assist with the affective issues confronting Taiwanese ESP students. As was shown in chapter five, Taiwanese learners tend to be silent and hesitant to state their opinions and contribute to the resolution of case studies or classroom tasks. This lack of spontaneity and experience of anxiety are common phenomena in English classrooms, and according to interviews conducted in this research, stem from the dominance of the 'sit and listen' approach to teaching. Some students may have constructive opinions regarding assigned tasks but hesitate to speak up due to shyness or personal insecurities about their English. With smaller groups, the shy students who are anxious to talk in public are more likely to express their opinions. As students are collaborating to resolve critical incidents, produce project reports, and undertake class presentations, they are united in a common goal requiring the communicative use of English for authentic purposes. In this way, the students are not only learning academic skills and key processes required for employment, they are also acquiring strategies for team work.

In terms of teaching, small group learning serves other important functions. To compensate for the difficulties of teaching large-sized-classes and to increase the effectiveness of instruction, the teacher in the second stage of the ESP curriculum and the supervisor, in the third stage of the ESP curriculum, can directly assign tasks and

responsibilities to group leaders, who in turn, will distribute subtasks to their group members.

### **Framework and Syllabus of the Second Stage of EE: an APBL approach**

The contents of the textbooks for the proposed Engineering English ESP courses serve the function of helping learners read manuals regarding machine operation and introducing the taxonomy of language use in the engineering workforce. As shown in chapter four, these language uses include the completion of routine tasks, soft skills, hard skills, TOPS and negotiation skills, and ICC in the engineering workforce. Second, authentic dialogues recorded from real interactions among engineers will be introduced to the students. Third, video clips regarding the use of TOPS skills in authentic workplace situations will be shown. Fourth, students will be required to practice TOPS with team members under the supervision of the lecturer (see Table 6.4).

Booklets	Terminology in engineering professions
	Strategies for reading manuals
	Introduction to the taxonomy of language use in the engineering workplace
	Routine tasks in the engineering workforce
	Soft skills and hard skills in the engineering workforce
	ICC in the engineering workforce

	TOPS skills
	Negotiation skills
	Professional project reading and writing
Voice records	Conversations among engineers
Films	Applying TOPS
Simulated practice	APBL practice regarding the application of TOPS
APBL Assessment	Provide problem boxes for discussing authentic scenarios in the engineering workforce
	Assign responsibilities to team members for the solution of a project
	Scaffold learners' application of TOPS skills to solve problems
	Students present their projects

**Table 6.4 Framework for the 2nd stage of EE ESP Course**

Further, TOPS skills are interwoven into tasks involving simulations of critical incidents from authentic engineering workplaces. For example, a learning scenario might be based on a problem that occurred at an engineering company and required teamwork skills and the application of TOPS and negotiation skills, within the context of a multicultural workforce. The activities will be designed to incorporate real-time

communication, with students required to use Q & A skills via the telephone, conference calls, listening, and taking notes. In addition, a platform of online communication will be established in order to enhance the opportunities to interact or communicate with peers and instructors outside of the classroom. The functions of the platform could be sharing favourite music or exchanging information or knowledge. Feedback from peers and instructors could boost learners' motivation to increase their English language proficiency and to use the language for authentic purposes.

Students will be required to participate in online communication in order to complete their assessment. For example, students will be asked to select current articles or news stories related to engineering and provide a critical response via an online platform for communication such as a blog or a forum. Also, students will be encouraged to read each other's writing and provide rich, meaningful feedback. The online platform will eventually become the initial model for students to experience an authentic engineering network – the use of technology to interact with colleagues across multiple locations. This is an important precursor for students to begin learning the necessary skills, professional etiquette, and networking strategies to function in their future workplace.

The processes required to use the English language in professional contexts are therefore introduced and practiced in this EE curriculum. Assessment items emphasise important professional qualities such as punctuality, positive attitudes toward English language communication, and high quality performance. The teachers will keep these

goals in mind during teaching and assessment throughout the semester and will frequently remind students to achieve these goals. Seminars are often held for supervising workplace simulations (see Table 6.5).

Week	Lesson Plan
1~18	Terminology in Engineering English
1~18	An online platform for scaffolding engineering communication
3~16	Introduction of the taxonomy of language use in the engineering workplace
a	Routine tasks in the engineering workforce
b	Soft skills and hard skills in the engineering workforce
c	ICC in the engineering workforce
d	Introduction of TOPS skills and negotiation skills
e	Introduction of problem boxes
f	Workshop application of TOPS skills
g	Authentic project featuring TOPS
17~18	Assessment of the 2nd stage of the ESP curriculum
a	Assign responsibilities to team members for completion of projects
b	Scaffold learner application of TOPS skills to solve problems via the online forum and seminars
c	Assessment of team project writing and presentation

**Table 6.5 Syllabus of 2nd Stage of EE**

**Framework of the Second Stage of BE: an APBL Approach**

As most of the business employees interviewed in chapter four identified negotiation skills as essential to success in the profession, the second stage of the proposed business ESP course emphasises negotiation skills in English. In particular, win-win negotiation strategies will be featured in learning activities and assessment. As such, learning experiences that encourage positive cooperation among colleagues and companies will be emphasised. In order to foster negotiation skills for business English learners, teaching resources will contain booklets, authentic dialogues, film clips and authentic projects or case studies retrieved from the workplace (See Table 6.6).

Booklets	Terminology in the business profession
	Introduction to the taxonomy of language use in the business workplace
	Routine tasks in the business workforce
	Soft skills and hard skills in the business workforce
	ICC in the business workforce
	Business etiquette in a multicultural market
	'Win-win' negotiation strategies
	Introduction to TOPS skills in the business workforce
	Introduction to authentic case studies
	Professional project reading and writing

Voice records	Buyer and seller dialogues
Films	Observe case studies regarding negotiation skills in the business workforce
Simulated Practice	APBL workshop focused on negotiation in the business workplace
APBL Assessment	Provide problem boxes for discussing authentic scenarios in the business workforce
	Assign responsibilities to team members for the completion of projects
	Scaffold learner application of negotiation skills to solve problems via the online forum and seminars
	Student project presentations

**Table 6.6: Framework of the 2<sup>nd</sup> stage of the proposed BE ESP Curriculum**

Course activities will involve lectures regarding communicative competence for the business workplace and student application of key strategies in pair work in order to apply what they are learning. An Authentic-Problem-Based Approach will be applied to provide learners with simulated practice within workshop contexts, which allows learners to work together with the lecturer, toward the completion of the task. The workshop thus provides a non-threatening environment for scaffolded, supported communicative practice. The lecturer will assist students to apply their knowledge of English language negotiation skills in order to resolve authentic problems. In the final unit of the second stage of the proposed business ESP course, an assessment with APBL will take place. Learners will be assigned into teams and each team will practice

negotiation skills and present their solution to a critical incident via written projects and class presentations (See Table 6.7).

Week	Lesson Plan
1~18	Terminology in BE areas
1~18	Introducing the online platform for scaffolded discussions
3~16	Introduction to the use of language in the business workplace
a	Routine tasks in the business workforce
b	Soft skills and hard skills in the business workforce
c	ICC in the business workforce
d	Business etiquette in an multicultural market
e	'Win-win' negotiation skills in English
f	Introduction to TOPS in English
g	Authentic project learning based on critical incidents from the business workplace
h	Authentic projects regarding the application of negotiation skills
i	Seminars for scaffolding communicative competence for the business workplace
17~18	Assessment of the 2nd stage of the business English curriculum using simulated practice
a	Assign responsibilities to team members for project completion
b	Scaffolded application of negotiation skills for problem solving in business workplace

c	Assess team project writing and presentations
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**Table 6.7 Syllabus of the 2nd Stage of Proposed BE ESP Curriculum**

**The Third Stage of the Proposed EE and BE ESP Course**

After simulated practice, the third stage of the proposed ESP curriculum provides an opportunity for students to apply what they have learnt about the English language for professional purposes in the authentic context of the business and engineering workplaces. Accordingly, in addition to simulated practice, the third stage of the proposed curriculum will provide the opportunity for authentic language use by providing internship courses for ESP students. No other researcher has integrated scaffolding theory into internship courses for ESP learners in Taiwan. As discussed in chapter four, 28 out of 40 participants indicated that Taiwanese students started their English learning with the goal of gaining good grades for entering an ideal school or university. Further, the interview data contained 36 references from 26 participants regarding the passivity of Taiwanese English language learners toward communication in the foreign language. Similarly, 56 references from business employees and 17 references from the engineer participants emphasised the importance of enthusiasm toward communication in English. Leader employees were particularly adamant about the necessity of ‘real world’ experiences for ESP student preparation for the workplace.

However, as discussed in chapter five, my data showed that Taiwanese students learn English predominately for gaining good grades, instead of authentic use. Accordingly, English language learning strategies for Taiwanese learners have focused on strategies for gaining higher scores rather than expanding communicative competence. For Taiwanese high school leavers, the purposes of using English were for examination and rarely for 'real world' communication, the learning environment seldom involved English-medium communication, and students were not confident in applying study skills or independent learning strategies. As was discussed in chapter four, engineers require English language to communicate spontaneously and under high-pressured situations via multiple channels, such as overseas telephone calls or conference calls. According to interviewees, EE learning and teaching in the Taiwanese classroom bears little resemblance to these authentic contexts. If students merely learn EE in the classroom, they are unlikely to experience authentic language use.

The third stage of the proposed ESP curriculum is designed to synthesize key themes from the foundation courses, the key uses of language in the workplace, an understanding of the authentic context of use, and real workplace experience. Importantly, internship courses are unlikely to benefit learners by simply providing hands-on experience in the real workforce but failing to offer the necessary teacher scaffolding. This research proposes that ESP students need opportunities to explore language use by attending internship courses so they can construct the necessary background knowledge to apply what they have learnt in ESP classes. Further, 'real

world' uses of English can motivate students to communicate by dealing with authentic workplace issues and utilising soft and hard skills. Once the learners realize the context of communication, they can be aware of the fact that learning English is not merely for gaining high scores but for establishing pragmatic ICC for the workplace.

However, merely providing authenticity is not sufficient for developing pragmatic communicative competence. Learners can repeat the same communicative mistakes if they do not have expert supervision to scaffold their learning. As was shown in this research, engineering employees claimed their language skills did not improve significantly even after exerting considerable effort and being in the engineering workforce for years. They also pointed out that their company offered a variety of training courses, including assistance with TOPS skills, as well as English or Japanese language courses. Unfortunately, these engineers frequently worked more than twelve hours a day so very few of them attended English classes or some attended but ceased after a few days due to the heavy workload and long working hours. These engineers suggested that adequate EE education should be provided in the university so that new graduates are able to perform properly as soon as they enter the engineering workforce.

Thus, if EE learners could work in engineering industries with supervision, they could experience authentic language use and also develop specialist area knowledge. Internship courses for EE education could therefore support the notion of authenticity with supervision to promote learners' English language communicative competence.

Similarly, business employees also suggested that internship should be provided in universities to shorten the training time and increase the workplace preparedness of new employees. Scaffolded internship courses could provide important pedagogical and psychological elements for ESP student education. In the internship courses in this proposed ESP curriculum, the students will be required to keep reflective journals to encourage self-awareness in learning. Students will be required to observe and record the use of English language in the workplace, using the taxonomy provided by this research, summarising any communication observed in the workplace, and recording problems encountered with their own communication (see Table 6.8 and 6.9).

The role of a linguistic supervisor in internship courses can be to supervise this reflective journaling and to provide support with seminars and online forum interaction. The supervisor and the learners can have routine discussions in both face-to-face seminars and computer-aided channels, such as an online platform, emails, or conference calls. During meetings, learners can seek assistance regarding language difficulties encountered and the teacher can facilitate the development of independent learning strategies in order to resolve these issues. Furthermore, this learning experiences encountered in internships can be used to innovate ESP education in the future, with the problems reported by learners to be used in 'problem boxes' for updating teaching materials.

The third stage of the curriculum aims to scaffold advanced ESP learners as they undertake internship courses, seminars and interaction in an online forum. With the APBL approach, the third stage of the proposed ESP curriculum is designed to help

learners to explore real scenarios from the workforce, and learn solutions to these issues by observing employee interactions. For example, in a medical setting, a nurse could be guided by experienced nurses to participate in the required workplace activities, eventually achieving proficiency in both specialist knowledge and the English language skills required (Baghcheghi et al., 2011). The initial goals could be problem solving under guidance, then problem solving with collaboration, and finally, independent problem solving (Vygotsky, 1978).

The assessment of this stage of the curriculum will be allocated to the last two weeks of the course. Team members will have to complete the projects assigned by the supervisor, producing both written reports and class presentations. The projects in EE could be based on authentic critical incidents from the application of TOPS skills; whereas the projects in BE could be based on authentic critical incidents from the application of negotiation skills in the workplace. In this way, ESP students' learning would be no longer restricted to merely memorizing terminology. Rather, ESP learning would become a vital component of student preparation for their future careers.

**a. Syllabus of the Third Stage of EE: an APBL approach**

Week		Lesson Plan	Objectives of lessons
1~2	C	Framework of internship and Journal keeping	Guide to the internship experience
3~12	W	Observations regarding	Raise awareness of professional

		language use within the engineering workplace	communication skills and strategies
a	W	Reading manuals for problem-solving purposes	Exploration of how engineers find resources efficiently
b	W	Efficient problem solving in the workplace	Solving problems using engineering manuals
c	W	Routine tasks in the engineering workforce	Recording routine tasks
d	W	Soft skills and hard skills	Discern and record soft and hard skills
e	W	ICC in the engineering workplace	Record the role of ICC in the engineering workplace
f	W	The application of TOPS skills	Record the use of TOPS skills in the workplace
13	C	Seminars	Discuss learning reflections
14	C	Establishment of problem boxes	Enhancing future ESP course by applying problem boxes
15~16	C	Authentic project reading regarding TOPS	Enhancing project reading and writing skills with TOPS
17~18	C	Assessment of the 3rd stage of the proposed curriculum	Assess ICC and application of learning skills through project writing and presentations
a		Project writing and presentations	

b	Project writing and presentations	
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**Table 6.8 Syllabus of the 3rd Stage of EE**

*Note: C denotes classroom and W denotes workplace.*

**b. Syllabus of the Third Stage of BE: an APBL approach**

Week		Lesson Plan	Objectives of lessons
1~2	C	Framework of internship and journal keeping	Provide guide to internship
3~12	W	Observation regarding the context of BE	Raise student awareness of professional communication
a	W	Routine tasks in the business workforce	Students record routine tasks
b	W	ICC in the business workplace	Students record instances of ICC in the workplace
c	W	Business etiquette in a multicultural market	Students record taboos and examples of appropriate communication
d	W	Soft skills	Students record soft skills
e	W	Hard skills	Students record hard skills
f	W	Negotiation skills in the business workplace	Students record instances of negotiation skills

13	C	Seminars	Student discussions reflecting on learning
14	C	Establishment of problem boxes	Enhance future ESP courses by applying key critical incidents to form problem boxes for students
15~16	C	Authentic project regarding TOPS	Enhancing project reading and writing and negotiation skills
17~18	C	Assessment of the 3rd stage of the proposed curriculum	Assess ICC and learning through project writing and presentations
a	C	Project writing and presentations	
b	C	Project writing and presentations	

**Table 6.9 Syllabus of the 3rd Stage of BE**

*Note: C denotes classroom and W denotes workplace.*

In addition to providing authentic learning experiences, internship courses will also offer students a sheltered, non-threatening introduction to the workplace. It is recommended that subject specialists and language teachers cooperate to develop and implement the internship component of the course. For example, engineering students could attend internship courses with one subject supervisor and one language supervisor so the students can have expert support for both subject knowledge and linguistic needs. Accordingly, collaborative ESP education among disciplines and between pedagogical and professional settings is essential for ESP

curriculum design. Co-teaching requires scheduled time for both language teachers and professionals, so it is probably not feasible to recruit professionals, such as business managers or engineering managers, to deliver weekly lectures. On the other hand, one-off workshops can provide an opportunity for expert input and co-teaching between language teachers and professionals.

The significance of industry and university collaboration for ESP education has been discussed in previous chapters. Nonetheless, there can be numerous obstacles to carry out such cross-setting collaboration. First, the policy makers in language departments in universities might have difficulties approaching industry professionals or may have time and budgetary constraints preventing them from initiating curricula innovation. Second, the policy makers in industries may hesitate to participate in internship courses for reasons of confidentiality in business. Yet, if ESP education can successfully foster competent English language users in specific disciplines, both university and occupational settings will benefit.

#### **6.4 Future research initiatives:**

According to existing literature, weak communicative competence has been an enduring problem for EFL education in Taiwan. In this research, the employee participants who studied English in the 1980s, 1990s, and 2000s were dissatisfied with their English education. Surprisingly, the student participants who studied in

universities in the 2000s and 2010s were also frustrated with their English education. Most participants, including students and employees, claimed that they invested extra time and money studying at private language schools when they were in high school. The flourishing of private language schools reflects the importance attached to English education in Taiwan. Unfortunately, these private language schools seemed to have made little contribution to communicative competence.

Collaboration between learners, teachers, and experts in the workforce could increase the effectiveness of ESP education in Taiwan. Collaborative teaching across disciplines and nations is not new in other areas of education (Cheng, 2008; Connor, Rogers, & Wong, 2005; Jackson, 2005) but has not yet become a feature of ESP in Taiwan. In order to innovate ESP education, this research advocates cooperation among disciplines in the university and among universities and industries. Further, I argue that internship courses should become a compulsory component of ESP education. For example, there is a trend to offer internship courses for non-education fourth year university students in Taiwan and China with the purposes of providing authentic working experience and to enhance opportunities for international recruitment (Lee, 2015). However, EFL courses in Taiwanese universities rarely continue for three years. Further, universities would need to source teachers with the adequate linguistic and specialist subject proficiency to supervise the internships courses and provide students with the necessary support to maximise outcomes.

Indeed, the essential role of university supervisors must not be ignored. As discussed in previous chapters, my data indicated that merely immersing students or employees in the workforce without the supervision of English teachers is unlikely to improve communicative competence in English. My findings are consistent with the research by Tsui (1992) and Spence and Liu (2013), who discovered that engineers and leader engineers require language teachers to promote their communicative competence in the workforce even after years of employment. By analysing Tsui's research in 1992, Spence and Liu's work in 2013, and my data, it is clear that the gap between English education and 'real world' language use in the workplace has existed for more than two decades. Furthermore, 105 references from my data pointed out that ESP education in Taiwan is not successful in preparing business and engineering students for the English language requirements of the workplace. If university students can be equipped with communicative competence by using English in authentic contexts whilst receiving carefully scaffolded supervision from ESP teachers, there is a hope that university graduates will be better prepared for the challenges of the business and engineering workplaces. Therefore, in future, I will seek opportunities to integrate internship courses within ESP curricula to create workforce-and-university-oriented ESP education.

However, the design of internship courses requires further research to investigate the optimum ways for collaboration between linguistic departments, subject departments, and companies. Further investigation into the feasibility of internship courses and associated issues of privacy and confidentiality is also required. In addition to the

implementation of internship courses, the assessment of these practical components of ESP education also requires further research in order to establish a required standard for performance and valid and reliable assessment of these standards. ESP teachers must also have a clear guide as to student supervision and required standards must be transparent to students and industry partners so that there is a common understanding of the qualifications. As previous research has shown, a lack of qualified professionals has been a major issue in the establishment and maintenance of ESP education in Taiwan (Huang, 1997, Tsao et al., 2008). This will also need to be resolved if ESP education incorporating communicative teaching and internship supervision is to be successful.

## **Conclusions**

My research is the first study to investigate language needs by interviewing four stagers. The employment of a participatory approach in this research has allowed for the expression of student and employee voices. Given the emphasis on 'real world' contexts that is the foundation of ESP, I was determined to incorporate the voices of various stakeholders in the workforce along with learners in the university. This incorporation of industry alongside academia renders my study a deeply original contribution to the Taiwanese ESP field. If I had merely interviewed students, the taxonomy of language use for professionals would be incomplete, as students had limited knowledge of ICC, TOPS, and 'win-win' negotiation skills. On the other hand, if I had only interviewed employees, the challenges and specific desires of current

university students would have been omitted from the study. Therefore, by incorporating input from the four stagers, this research has facilitated the design of a proposed ESP curriculum based on the guiding principles of authentic and communicative language instruction. I have applied the notion of authenticity not merely to the Needs Analysis stage of this research, but also to the curriculum design.

This thesis sought to explore the extent to which Taiwanese ESP students and graduates feel prepared for the communicative competence requirements of the engineering and business professions. In order to address this central research question, I conducted in-depth, face-to-face interviews with first and fourth year students to identify their perceptions of ESP content and methodological approaches in Taiwan. I also examined current ESP curricula, materials, and methodologies in BE and EE courses in Taiwan. I then compared the content and approaches of ESP instruction with the communicative competence requirements of the engineering and business workplaces.

In doing so, I produced a taxonomy of language use in these workplaces by interviewing entry/mid level and senior engineers and business employees about the main linguistic requirements of their professions. As such, this systematic and holistic development of a detailed taxonomy of English language use in the business and engineering contexts was produced in consultation with language users from these workplaces. Prior to this research, no such taxonomy existed. I argue that my study has therefore contributed to existing literature, as student feedback on their ESP learning

experiences needs to be considered in terms of the language use in the workplaces they intend to enter. By considering data provided by students and employees at various stages of their career, a broad range of English language requirements were identified.

According to students and employees in my research, there is a large distance between the content of ESP curricula and the specific English language needs of Taiwanese engineers and business people. Gaps in current ESP education mean that the students in this study feel unprepared for the specificities of the workplace language environment. Importantly, my study's focus on student and employees' *perceptions* of their English language ability and learning needs allowed me to examine affective elements related to confidence and anxiety. This research has shown that student and employees experience considerable apprehension when using English for academic and professional purposes. I argue that any attempts to improve graduate preparedness for the workplace require attention to these affective elements.

I have proposed a framework for preparing ESP students for the linguistic demands of their future workplaces. This framework for an ESP curriculum is based on data from current students and employees in the business and engineering industries. The recommended ESP curriculum has a three-fold design, including foundation and advanced EE and BE courses. The curriculum will address EAP skills to prepare students for tertiary study in English. Advanced courses aim to provide authentic classroom communication, addressing ICC, and specific uses of language in the workforce. Finally,

the internship component of the course is the most innovative element, proposed as a means of providing students with 'real world' experience regarding the use of English for professional purposes. It is hoped that such a course may better prepare ESP students for a successful transition to the linguistic demands of the 21<sup>st</sup> century business and engineering workplaces.

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## Appendixes

A1 Interview protocol for first year students

### **Project Title: Innovation of English for Specific Purposes Curricula in Taiwanese Universities**

Start time of interview \_\_\_\_\_ End time of interview \_\_\_\_\_

Date of interview \_\_\_\_\_ Venue of interview \_\_\_\_\_

Interviewer \_\_\_\_\_ Participant \_\_\_\_\_

First of all, thank you very much for your consent to this interview. In terms of English learning or use, I would like to ask some questions about your experiences or opinions.

1Q1a: In terms of the 4 skills: listening, speaking, reading and writing, which of the 4 skills received the most and least attentions in English teaching at your high school?

1Q1b: Would you please share one of your positive and one of your negative English learning experiences from your high school education?

1Q02: What English language skills do you find difficult and you will prioritise in your university study?

1Q03: What teaching strategies did your English teacher(s) use at your high school? Would you please tell me what English teaching strategies you liked and disliked? Why?

1Q04: Apart from English class, in what situations did you use English at high school?

1Q05: In terms of English teaching, what are you expecting from university study?

This is the end of interview. Thank you very much for your opinions.

A2 Interview protocol for fourth year students

**Project Title: Innovation of English for Specific Purposes Curricula in Taiwanese Universities**

Start time of interview \_\_\_\_\_ End time of interview \_\_\_\_\_

Date of interview \_\_\_\_\_ Venue of interview \_\_\_\_\_

Interviewer \_\_\_\_\_ Participant \_\_\_\_\_

First of all, thank you very much for your consent to this interview. In terms of English learning or use, I would like to ask some questions about your experiences or opinions.

2Q1a: In terms of the 4 skills: listening, speaking, reading and writing, which of the 4 skills received the most and least attentions in English teaching at your university?

2Q1b: In terms of four skills, what progresses have you achieved at your university? What are your strengths and weaknesses?

2Q1c: Did you take any English for Specific Purposes (ESP) courses? If not, why? If yes, what skills were emphasized?

2Q02: What English language skills do you find difficult and you will prioritise to improve in the future if you have opportunities?

2Q03: Would you please tell me what teaching strategies you liked and disliked at university?

2Q04: Apart from English classes, what circumstances did you use English at university? Please be specific.

2Q05: Do you think the English teaching at university is useful for your future career? Is the English teaching adequate for the workplace?

This is the end of interview. Thank you very much for your opinions.

A3 Interview protocol for non-leader employees

**Project Title: Innovation of English for Specific Purposes Curricula in Taiwanese Universities**

Start time of interview \_\_\_\_\_ End time of interview \_\_\_\_\_

Date of interview \_\_\_\_\_ Venue of interview \_\_\_\_\_

Interviewer \_\_\_\_\_ Participant \_\_\_\_\_

First of all, thank you very much for your consent to this interview. In terms of English learning or use, I would like to ask some questions about your experiences or opinions.

3Q01: In what situations do you use English for your work? Please be specific.

3Q02: In your opinion, is there any area of using English at the work that the university has overlooked?

3Q03: After joining the workplace, what English language skills do you think you need to improve urgently? Is there any opportunity for you to make such improvement?

3Q04: What is your comment to new graduates in comparison with your English proficiency when you newly graduated from university? (New graduates refers to graduates who obtained their bachelor degrees after 2011).

3Qa5a: Could you please list new challenges faced by the new graduates in 21st century workplace?

3Q5b: Would you please share some important events or interesting experiences you or your colleagues have encountered at the workplace?

This is the end of interview. Thank you very much for your opinions.

A4 Interview protocol for leader employees

**Project Title: Innovation of English for Specific Purposes Curricula in Taiwanese Universities**

Start time of interview \_\_\_\_\_ End time of interview \_\_\_\_\_

Date of interview \_\_\_\_\_ Venue of interview \_\_\_\_\_

Interviewer \_\_\_\_\_ Participant \_\_\_\_\_

First of all, thank you very much for your consent to this interview. In terms of English learning or use, I would like to ask some questions about your experiences or opinions.

4Q01: How do you assess English proficiency when you recruit new staff members to your department?

4Q02: Is English proficiency crucial for assigning responsibilities to staff members?

4Q03: What English proficiency do you expect that the university could prepare for their students to enter the workplace?

4Q04: As a leader, how important is English proficiency to your work?

4Q5a: In terms of English learning, do you think it is necessary for university students to work in the industry in order to improve their English proficiency? Please give reasons for your answer.

4Q5b: Would you please share some important events or interesting experiences you or your colleagues have encountered at the workplace?

This is the end of interview. Thank you very much for your opinions.

Information Statement to Dean

Faculty of Engineering/Business

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B1



Project supervisor  
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**Innovation of English for Specific Purposes Curricula in Taiwanese Universities**

**((Version 2: October 23 2011))**

Dear Dean:

Your students are invited to participate in the research project identified above if your faculty is the engineering or international business areas. This project is being conducted by Ms s Su-Ching Juan from the School of Education at the University of Newcastle. Su-Ching Juan is conducting the research as part of her PhD degree under the supervision of Dr. Rachel Burke and Dr. Tom Griffiths from the University of Newcastle, Australia.

***Why is the research being done?***

The purpose of the research is to identify the language needs of English for Taiwanese in order to improve English Curriculum design in Taiwanese universities.

***Who can participate in the research?***

All the freshman and 4<sup>th</sup> year students who are studying in the engineering or business faculty are invited to participate in this research.

***What choice do you have?***

Participation in this research is entirely on the individual's choice. Only those who give

their informed consent will be included in this project. Whether you decide to let your students participate in or not, your decision will not disadvantage you or your students in any way. This research is not intended to assess your students' competence in English but to gain an understanding of the language needs for Taiwanese university students. During the research, if you or any of your students wish to withdraw, you or students may do so at any time without giving a reason. The interviewee could retrieve any data which she or he has provided.

***What would the students asked to do?***

Your students will be asked to participate in a one-to-one interview with Su-Ching Juan at their suitable time. Questions will focus on their experiences and opinions in terms of English learning and use.

The interview will be audio-taped and later transcribed by the researcher. An interviewee has the right to review the audio-recording and/or transcript. The location in which the interview will take place will be at a library on campus in their non-class hours. It is anticipated interviews will be conducted in November or December, 2011.

If you are willing to let your students participate in the interview, please email the researcher. She will send you a consent form by email. Please complete the consent form and send it to the researcher by email.

***How much time will it take?***

It will take approximately 40 minutes for the interview.

***What are the risks and benefits of participating?***

There is no anticipated risk in participating in this research. On the other hand, this research aims to improve the language ability for occupational purposes in Taiwan. There may not be direct or obvious benefit to the individual participants. Yet, this research will identify the specific language needs of Taiwanese and further improve the curriculum design to ultimately promote the effectiveness of communication in the society in Taiwan.

***How will individual's privacy be protected?***

Confidentiality will be maintained at all times. There will be no individual identification of any individual in any report of the study. The research data will be stored in a lockable cabinet in the researcher's office. The data will be kept securely stored for at least five years once the PhD is finished. Only the project supervisor, co-supervisor, and Su-Ching Juan will have access to the data.

***How will the information collected be used?***

The results will form the basis of a PhD thesis. The results also will be reported in academic journals.

A summary report of the findings will be available if you are interested in receiving one. Please tell Su-Ching Juan if you wish to receive one.

***What do you need to do to participate?***

Please read this Information Statement and be sure you understand its contents before you consent to let your students participate in. If there is anything you do not understand, or you have questions, contact the researcher. If you would like to let your students participate in an interview, please contact Su-Ching Juan by email at [c3072106@uon.edu.au](mailto:c3072106@uon.edu.au) or call her.

***How many students will be interviewed?***

We are seeking at least 10 first year students and 10 fourth year students. It may not be possible within this small project to interview everyone who volunteers. If you are not contacted for the participation of your faculty, we thank you for your interest, and invite you to email the researchers if you would like to be notified of information about the results of this research.

***Further information***

If you would like further information please contact Ms. Su-Ching Juan ([c3072106@uon.edu.au](mailto:c3072106@uon.edu.au)) or Dr. Rachel Burke ([Rachel.Burke@newcastle.edu.au](mailto:Rachel.Burke@newcastle.edu.au)).

Thank you for your attention.

Dr. Rachel Burke

Su-Ching Juan

Project supervisor

Researcher

***Complaints about this research***

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-2011-0283. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone **61-2-49216333**, email [Human-Ethics@newcastle.edu.au](mailto:Human-Ethics@newcastle.edu.au).

## Information Statement to Student

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B2

Project supervisor

Dr. Rachel Burke

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### **Innovation of English for Specific Purposes Curricula in Taiwanese universities**

**(Version 2: Oct 23, 2011)**

You are invited to participate in the research project identified above which is being conducted by Ms. Su-Ching Juan from the School of Education at the University of Newcastle. Su-Ching is conducting the research as part of her PhD degree under the supervision of Dr. Rachel Burke and Dr. Tom Griffiths from the University of Newcastle, Australia.

#### ***Why is the research being done?***

The purpose of the research is to identify the language needs of English for Taiwanese in order to improve English Curriculum design in Taiwanese universities.

#### ***Who can participate in the research?***

All the students who are enrolled in undergraduate courses in Engineering or Business faculty in your University are invited to participate in this research. The Deans of these two faculties have given Su-Ching Juan permission to contact you.

#### ***What choice do you have?***

Participation in this research is entirely your choice. Only those who give their informed consent will be included in this project. Whether you participate in or not, your decision will not disadvantage you in any way. This research is not intended to assess your competence in English but to gain an understanding of the language needs of Taiwanese. During the research, if you wish to withdraw, you may do so at any time without giving a reason. You could retrieve any data you have provided.

***What would you be asked to do?***

You are asked to participate in a one-to-one interview with Su-Ching Juan at a time that suits you. Questions will focus on your experiences and opinions in terms of English learning and use.

The interview will be audio-taped and later transcribed by the researcher. You have the right to review the audio-recording and/or transcript. The place in which the interview will take place will be at library on Campus. It is anticipated that interviews will be conducted in November or December, 2011.

If you are willing to participate in the interview, please email the researcher. She will send you a consent form. Please complete the consent form and send it to the researcher by email.

***How much time will it take?***

It will take approximately 40 minutes for the interview.

***What are the risks and benefits of participating?***

There is no anticipated risk in participating in this research. On the other hand, this research aims to improve the language ability for occupational purposes in Taiwan. There may not be direct or obvious benefit to the individual participants. Yet, this research will identify the specific language needs of Taiwanese and further improve the curriculum design to ultimately promote the effectiveness of communication in the society in Taiwan.

***How will your privacy be protected?***

Confidentiality will be maintained at all times. There will be no individual identification of you in any report of the study. The research data will be stored in a lockable cabinet in the researcher's office. The data will be kept securely stored for at least five years once the PhD is finished. Only the project supervisor, co-supervisor, and Su-Ching Juan will have access to the data.

***How will the information collected be used?***

The results will form the basis of a PhD thesis. The results also will be reported in academic journals. A summary report of the findings will be available if you are interested in receiving one. Please tell Su-Ching Juan if you wish to receive one.

***What do you need to do to participate?***

Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, contact the researcher. If you would like to participate in an interview, please contact Su-Ching Juan by email at [c3072106@uon.edu.au](mailto:c3072106@uon.edu.au) or call her at +886-929845336. You can decide on a suitable time for the interview.

***How many employees will be interviewed?***

We are seeking at least 10 freshman students and 10 senior students. It may not be possible within this small project to interview everyone who volunteers. If you are not contacted for an interview, we thank you for your interest, and invite you to email the researchers if you would like to be notified of information about the results of this research.

***Further information***

If you would like further information please contact Ms. Su-Ching Juan ([c3072106@uon.edu.au](mailto:c3072106@uon.edu.au)) or Dr. Rachel Burke ([Rachel.Burke@newcastle.edu.au](mailto:Rachel.Burke@newcastle.edu.au)).

Thank you for your attention.

Dr. Rachel Burke

Su-Ching Juan

Project supervisor

Researcher

***Complaints about this research***

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-2011-0283. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone **61-2-49216333**, email [Human-Ethics@newcastle.edu.au](mailto:Human-Ethics@newcastle.edu.au).

## Information Statement to Leader Employee

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B3

Project supervisor  
Dr. Rachel Burke  
School of Education  
Faculty of Education and Arts  
The University of Newcastle  
University Drive, Callaghan, NSW 2308  
Australia

Tel: +61 2 49216707  
Fax: +61 2 49217887

### **Innovation of English for Specific Purposes Curricula in Taiwanese Universities**

**(Version 2: October 23 2011)**

Your employees are invited to participate in the research project identified above if your company is the engineering or international business areas. This project is being conducted by Ms Su-Ching Juan from the School of Education at the University of Newcastle. Su-Ching Juan is conducting the research as part of her PhD degree under the supervision of Dr. Rachel Burke and Dr. Tom Griffiths from the University of Newcastle, Australia.

#### ***Why is the research being done?***

The purpose of the research is to identify the language needs of English for Taiwanese in order to improve English Curriculum design in Taiwanese universities.

#### ***Who can participate in the research?***

All the employees in your institute are invited to participate in this research.

#### ***What choice do you have?***

Participation in this research is entirely on the individual's choice. Only those who give their informed consent will be included in this project. Whether you decide to let your employees participate in or not, your decision will not disadvantage you or your employees in any way. There is no anticipated risk. This research is not intended to assess your employees' competence in English but to gain an understanding of the language needs for Taiwanese. During the research, if any of the participants wish to withdraw the text of his or her interview, he or she may do so at any time without giving a reason. The interviewee could retrieve any data she or he has provided.

***What would the employees be asked to do?***

They will be asked to participate in a one-to-one interview with Su-Ching Juan at their suitable time. Questions will focus on their experiences and opinions in terms of English learning and use.

The interview will be audio-taped and later transcribed by the researcher. An interviewee has the right to review the audio-recording and/or transcript. The location in which the interview will take place will be at a quiet coffee shop outside of workplace during non working hours. It is anticipated that interviews will be conducted in November and December, 2011.

If you are willing to let your employees participate in the research, please email the researcher. She will send you a consent form by email. Please complete the consent form and send it to the researcher by email. Attached with your consent email, please send the contact list of your employees so that the researcher can send invitation to your employees to participate in the research. The researcher will keep your name, your employees' names and your company's name confidential.

***How much time will it take?***

It will take approximately 40 minutes for the interview.

***What are the risks and benefits of participating?***

There is no anticipated risk in participating in this research. On the other hand, this research aims to improve the language ability for occupational purposes in Taiwan. There may not be direct or obvious benefit to the individual participants. Yet, this research will identify the specific language needs of Taiwanese and further improve the curriculum design to ultimately promote the effectiveness of communication in the society in Taiwan.

***How will individual's privacy be protected?***

Confidentiality will be maintained at all times. There will be no individual identification of any individual in any report of the research. The research data will be stored in a lockable cabinet in the researcher's office. The data will be kept securely stored for at

least five years once the PhD is finished. Only the project supervisor, co-supervisor, and Su-Ching Juan will have access to the data.

***How will the information collected be used?***

The results will form the basis of a PhD thesis. The results also will be reported in academic journals. If any participant is interested in receiving a summary report of findings, he or she can email the researcher. The researcher will send to him or her by email soon.

***What do you need to do to participate?***

Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, please contact the researcher. If you would like to participate in an interview, please contact Su-Ching Juan by email at [c3072106@uon.edu.au](mailto:c3072106@uon.edu.au). You can decide on a suitable time for the interview.

***How many employees will be interviewed?***

We are seeking at least 20 employees. It may not be possible within this small project to interview everyone who volunteers. If you are not contacted for the participation of your company, we thank you for your interest, and invite you to email the researchers if you would like to be notified of information about the results of this research.

***Further information***

If you would like further information please contact Ms. Su-Ching Juan ([c3072106@uon.edu.au](mailto:c3072106@uon.edu.au)) or Dr. Rachel Burke ([Rachel.Burke@newcastle.edu.au](mailto:Rachel.Burke@newcastle.edu.au)).

Thank you for your attention.

Dr. Rachel Burke

Su-Ching Juan

Project supervisor

Researcher

***Complaints about this research***

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-2011-0283. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone **61-2-49216333**, email [Human-Ethics@newcastle.edu.au](mailto:Human-Ethics@newcastle.edu.au).

## Information Statement to employee

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B4

Project supervisor

Dr. Rachel Burke

School of Education

Faculty of Education and Arts

The University of Newcastle

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### **Innovation of English for Specific Purposes Curricula in Taiwanese universities**

**(Version 2: Oct 23, 2011)**

You are invited to participate in the research project identified above which is being conducted by Ms. Su-Ching Juan from the School of Education at the University of Newcastle. Su-Ching Juan is conducting the research as part of her PhD degree under the supervision of Dr. Rachel Burke and Dr. Tom Griffiths from the University of Newcastle, Australia.

#### ***Why is the research being done?***

The purpose of the research is to identify the language needs of English for Taiwanese in order to improve English Curriculum design in Taiwanese universities.

#### ***Who can participate in the research?***

All the employees who are working in business or engineering areas are invited to participate in this research. The manager of your institute has given Su-Ching Juan permission to contact you.

#### ***What choice do you have?***

Participation in this research is entirely your choice. Only those who give their informed consent will be included in this project. Whether you participate in or not,

your decision will not disadvantage you in any way. This research is not intended to assess your competence in English but to gain an understanding of the language needs for Taiwanese. During the research, if you wish to withdraw, you may do so at any time without giving a reason. You could retrieve any data you have provided.

***What would you be asked to do?***

You are asked to participate in a one-to-one interview in English with Su-Ching Juan at a non-working hour that suits you. Questions will focus on your experiences and opinions in terms of English learning and use.

The interview will be audio-taped and later transcribed by the researcher. You have the right to review the audio-recording and/or transcript. You may request at a later date that your interview data not be used in the research project. The place in which the interview will take place will be at a quiet coffee shop outside of your company in a non-working hour. It is anticipated that the interview will be conducted in November and December, 2011.

If you are willing to participate in the interview, please email the researcher. She will send you a consent form by email. Please preview the consent form. On the date of interview, the researcher will bring 2 copied of consent form. Both of the researcher and you will sign and keep each.

***How much time will it take?***

It will take approximately 40 minutes for the interview.

***What are the risks and benefits of participating?***

There is no anticipated risk in participating in this research. On the other hand, this research aims to improve the language ability for occupational purposes in Taiwan. There may not be direct or obvious benefit to the individual participants. Yet, this research will identify the specific language needs of Taiwanese and further improve the curriculum design to ultimately promote the effectiveness of communication in the society in Taiwan.

***How will your privacy be protected?***

Confidentiality will be maintained at all times. There will be no individual identification of you in any report of the study. The research data will be stored in a lockable cabinet in the researcher's office. The data will be kept securely stored for at least five years once the PhD is finished. Only the project supervisor, co-supervisor, and Su-Ching Juan will have access to the data.

***How will the information collected be used?***

The results will form the basis of a PhD thesis. The results also will be reported in academic journals.

A summary report of the findings will be available if you are interested in receiving one. Please tell Su-Ching Juan if you wish to receive one.

***What do you need to do to participate?***

Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, please contact the researcher. If you would like to participate in an interview, please contact Su-Ching Juan by email at [c3072106@uon.edu.au](mailto:c3072106@uon.edu.au). You can decide on a suitable time for the interview.

***How many employees will be interviewed?***

We are seeking at least 20 employees. It may not be possible within this small project to interview everyone who volunteers. If you are not contacted for an interview, we thank you for your interest, and invite you to email the researchers if you would like to be notified of information about the results of this research.

***Further information***

If you would like further information please contact Ms. Su-Ching Juan ([c3072106@uon.edu.au](mailto:c3072106@uon.edu.au)) or Dr. Rachel Burke ([Rachel.Burke@newcastle.edu.au](mailto:Rachel.Burke@newcastle.edu.au)).

Thank you for your attention.

Dr. Rachel Burke

Su-Ching Juan

Project supervisor

Researcher

***Complaints about this research***

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-2011-0283. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone **61-2-49216333**, email [Human-Ethics@newcastle.edu.au](mailto:Human-Ethics@newcastle.edu.au).



C1

Dr. Rachel Burke

School of Education

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The University of Newcastle

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**Consent form for dean of engineering/business faculty:**

**Innovation of English for Specific Purposes Curricula in Taiwanese Universities.  
(Version 1: Aug 18, 2011)**

Researcher: Su-Ching Juan; Supervisor of the researcher: Dr. Rachel Burke

\_\_\_\_\_ agree that the students of my faculty will participate in the investigation described in the above research project and give my consent freely. I understand that my students have the right to decide to participate in this research or not.

I understand that the project will be conducted as described in the invitation letter, a copy of which I have retained.

I understand that my students and I have the right to withdraw from the project at any time and do not have to give any reason for withdrawing.

I understand that data provided by my students will remain confidential to the researcher and her supervisors. My students and I have the opportunity to have questions answered to their satisfaction.

Print name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Institution: \_\_\_\_\_



C2

Dr. Rachel Burke  
School of Education  
Faculty of Education and Arts  
The University of Newcastle  
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Australia

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Fax: +61 2 49217887

**Consent form for student of engineering/business faculty:**

**Innovation of English for Specific Purposes Curricula in Taiwanese Universities.**

**(Version 1: Aug 18, 2011)**

Researcher: Su-Ching Juan; Supervisor of the researcher: Dr. Rachel Burke

\_\_\_\_\_ agree that I will participate in the investigation described in the above research project and give my consent freely.

I understand that the project will be conducted as described in the invitation letter, a copy of which I have retained.

I understand that I have the right to withdraw from the project at any time and do not have to give any reason for withdrawing.

I understand that data provided by me will remain confidential to the researcher and her supervisors. I have the opportunity to have questions answered to my satisfaction.

Print name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Institution: \_\_\_\_\_



C3

Dr. Rachel Burke  
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Fax (02) 4921 7887

**Consent form Consent form for leader in engineering/business company:  
Innovation of English for Specific Purposes Curricula in Taiwanese Universities.  
(Version 1: Aug 18, 2011)**

Researcher: Su-Ching Juan; Supervisor of the researcher: Dr. Rachel Burke

\_\_\_\_\_ agree that our company will participate in the investigation described in the above research project and give my consent freely.

I understand that the project will be conducted as described in the invitation letter, a copy of which I have retained.

I understand that the employees in my company have the right to decide whether to participate in this project or not and they have right to withdraw from the project at any time and do not have to give any reason for withdrawing.

I understand that data provided by my employees will remain confidential to the researcher and her supervisors. They have the opportunity to have questions answered to their satisfaction.

Print name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Institution: \_\_\_\_\_



C4

Dr. Rachel Burke  
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**Consent form Consent form for non-leader in engineering/business company:**

**Innovation of English for Specific Purposes Curricula in Taiwanese Universities.**

**(Version 1: Aug 18, 2011)**

Researcher: Su-Ching Juan; Supervisor of the researcher: Dr. Rachel Burke

\_\_\_\_\_ agree that our company will participate in the investigation described in the above research project and give my consent freely.

I understand that the project will be conducted as described in the invitation letter, a copy of which I have retained.

I understand that the employees in my company have the right to decide whether to participate in this project or not and they have right to withdraw from the project at any time and do not have to give any reason for withdrawing.

I understand that data provided by my employees will remain confidential to the researcher and her supervisors. They have the opportunity to have questions answered to their satisfaction.

Print name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Institution: \_\_\_\_\_

D1

Advertisement: interviewee needed

If you are an employee in engineering or international areas, you are welcome to participate in this research. You will be interviewed for 40 minutes regarding your experience of English learning and use.

This interview is part of my PhD thesis. The purpose of this interview is to investigate English language needs for Taiwanese in order to improve curriculum design at university. In terms of English language use or learning, you are free to answer questions or ask questions during interviewing. If you are interested in participating in this research, please email the research your available time as soon as possible. The email address is [c3072106@uon.edu.au](mailto:c3072106@uon.edu.au)

You have the right to withhold the interview texts any time if you need to. Your personal information will be confidential.

Contact:

Su-Ching Juan  
School of Education  
University of Newcastle  
NSW 2308 Australia  
Email: [c3072106@uon.edu.au](mailto:c3072106@uon.edu.au)

This advertisement is approved by manager \_\_\_\_\_ on \_\_\_\_\_.  
The approval number is \_\_\_\_\_.

D2

Advertisement: interviewee needed

If you are a freshman or 4<sup>th</sup> year students in engineering or business faculty, you are welcome to participate in this research. You will be interviewed for 40 minutes regarding your experience of English learning and use.

This interview is part of my PhD thesis. The purpose of this interview is to investigate English language needs for Taiwanese in order to improve curriculum design at university. In terms of English language use or learning, you are free to answer questions or ask questions during interviewing. If you are interested in participating in this research, please email the researcher your available time as soon as possible. The email address is c3072106@uon.edu.au

You have the right to withhold the interview texts any time if you need to. Your personal information will be confidential.

Contact:

Su-Ching Juan  
School of Education  
University of Newcastle  
NSW 2308 Australia  
Email: c3072106@uon.edu.au

This advertisement is approved by the Media of \_\_\_\_\_ University  
on \_\_\_\_\_

Approval Number is \_\_\_\_\_