Necessary Skills in English for Korean Postgraduate Engineering Students in the Academic Community

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This study intends to investigate the needs of study skills for English of Korean postgraduate engineering students in an academic community. In raising the issues, this research uses semi-structured interview to examine the perceptions of Korean engineering students themselves and subject lecturers. The research showed that expanded command of study skills in English integrated with academic practices of the engineering discipline was seen to be required for students in the community. Considering the demands of participation in the global academic community leads to the conclusion that the practice of EAP teaching should encompass integrative forms of literacy along with the particular academic culture and conventions of the engineering discipline.

I. INTRODUCTION

In most areas of study in Korea, English plays a major role in fulfilling the purpose of international communication. Likewise, for Korean engineering students, English is a crucial instrument for communicating with foreign academics and intellectuals as well as for developing engineering knowledge (Shin, 2010). The issue of English language teaching in Korea has now become politically and educationally lively enough to warrant comparison with a kind of ‘fever’ (Jeong, 2004). Nonetheless, the levels of English teaching in Korea still lag behind those required to produce students of engineering and other subjects who can meet reasonable international standards of English competence and skills (Templer, 2002) within the academic community.

At the tertiary level in Korea, specific English teaching approaches grounded in the

* Funding for this paper was provided by Namseoul University.
needs of particular groups of students have been rare (Gulliver, 2001; Kim, 2007; Lee, 2003). Accordingly, even though Korean engineering students require English as a vital instrument for international communication, ensuring strong ability in English related to each specialized area, many have still not received an education that focuses on their specialized skills and contents. This unhappy situation makes Korean engineering students vulnerable. They sometimes experience frustration when trying to manage academic tasks while using English in international academic societies without the experience of an English education that has been directly geared to their subject. They need specialized skills in English; however, the current educational system is still inadequate as a means for educating them appropriately. There is as yet no clear understanding or in-depth analysis of how to address the needs for study skills of Korean postgraduate engineering students in English in academic contexts.

For these reasons, language teaching at the tertiary level in Korea needs to become more responsive to those needs of learners that arise when they take part in various social practices in the global academic community. In order to respond in this way, it is necessary first to analyze the perceptions of Korean students and subject lecturers concerning students' English needs of study skills as members of that community.

This research aims to present findings on the needs of study skills for Korean postgraduate students in Korea as perceived by students themselves and by subject lecturers in the academic practices of engineering. Their preferences and problems regarding skills are discussed with reference to study skills. This paper will firstly consider the concept of study skills in relation to the historical development in EAP and criticisms of the term study skills by EAP specialists, and will explain how I accommodate the term study skills for my study. Then it will draw on data of needs of study skills for Korean postgraduate students in the academic practices of the engineering community. The study also addresses the reasons given for these preferences and the related problems for students in their academic settings in Korea.

II. NEEDS RELATED TO STUDY SKILLS

The concept of skills in EAP often includes the categories of study skills, because EAP has attempted to help students use English for their learning (Flowerdew & Peacock, 2001). Various layers of concepts of necessary study skills have proliferated, depending on the researchers. Study skills thus encompass a wide range of activities for learners in various study situations. For example, Munby (1978, pp. 123-131) set up a ‘taxonomy of study skills’ including an extremely precise list of 260 study skills categorized into 54 groups. [He called 'study skills' language skills.]
In this study, the concept of *study skills* refers to a very wide range, including strategies, techniques and other non-linguistic elements, following Johnson and Johnson (1998):

> at one end of the spectrum we are concerned with relatively ‘mechanical’ skills or techniques (libraries; referencing), and at the other end with study processes and strategies that are virtually synonymous with the skills and subskills of language use (reading; listening). Others are defined according to the study situations themselves (seminars; examinations) and yet others concerned with personal aspects of efficiency and time management quite unrelated to linguistic competence. (p. 309)

Historically, skills-based EAP courses originated in the belief that the teaching of language with a focus on linguistic concerns such as register and rhetorical description is insufficient. From the early 1970s, EAP researchers became interested in "how students acquire English in academic settings," and shifted their attention to skills (Bensch, 2001, p. 9). EAP teachers have argued that literacy may best be acquired as students seek meaning and process texts that are of interest to them (Johns, 1997; Zamel, 1982). There was a need to address the "thought processes that underpin language use" (Dudley-Evans & St. John, 1998, p.24) when skills are used to complete a task. It was presumed that underlying all language use there are common processes of reasoning and logical interpretation. A number of studies about skills were thus first conducted to help native English speaker students become effective independent learners in the UK, and the teaching approach and materials designed for native students have been brought into use for non-native students (Jordan, 1997), to help them do what will be expected in academic contexts.

However, this notion of 'transferable' skills began to be problematized as a contentious and "deficit model," because it does not consider social and cultural practices in particular academic contexts (Lea & Street, 2000, p. 32). This is because the contemporary social changes related to globalization have led to a more specific concern with the manner in which language is used for communication among different groups of people.

In this new situation, the communicative needs of learners in relation to skills have developed, with changing concerns and deeper and wider perspectives than previous ones. That is, studies of disciplinary tasks and genres have criticized the concepts of skills (Hyland, 2002), because the concepts of study skills presume an underlying common reasoning process, regardless of the disciplinary areas and learners' situated contexts. The notions of transferable study skills and strategies are criticised, because these skills do not match with the sociocultural contexts in which students are involved. That is, "more discipline-sensitive and discourse-based approaches see learning as an induction into a new academic discourse rather than an extension of existing skills" (Hyland & Coles, 2006,
The features of situated literacy competence may be different according to particular disciplines and contexts. This is because "each community has different purposes and ways of seeing the world which are associated with distinct practices and communicative conventions" (Hyland & Hamp-Lyons, 2002, p. 5).

Furthermore, since the mid-1990s, the term academic literacies has come to take into account the cultural and contextual components of skills practices "at the level of epistemology and identities in tertiary education as constituted in discourse and power" (Lea & Street, 2000, p. 35). "Academic Literacies research points to the complexity of the codes and conventions that students need to negotiate to become accomplished players in the academy to consider the institutional, disciplinary and social contexts" (Ivani & Lea, 2006, pp. 12-13). The notion of academic literacy thus incorporates "the complex set of skills which are increasingly argued to be vital underpinnings of cultural knowledge required for success in an academic community" (Hyland & Hamp-Lyons, 2002, p. 4). The academic community and disciplinary context permeate at the international level, because globalization activates more participation of local academics in the global community. Therefore students who want to be members of the international academic community need to learn a specific variety of literacy used in discipline-specific communicative practices in the community.

Study skills are thus considered in relation to particular academic practices such as lectures, writing papers, supervision and conferences in the academic community. This is because learning as a situated activity targets "the mastery of knowledge and skills" which enable "newcomers to move toward participation in the sociocultural practices" (Lave & Wenger, 1991, p. 29), that is, the academic practices, of the academic community.

Although the term 'study skills' in English is nowadays contentious and challenged by the concept of academic literacy, in this study, I will continue to use the terms 'study skills' to mean not decontextualized, transferable or atomized skills ignoring disciplinary conventions and cultures, but components of situated literacy and oracy in the disciplinary context. This is simply because engineering academics may be more familiar with the term and the concept of academic literacy, which is supported by this paper, incorporates the notion of skills (Lea & Street, 2000). Therefore, in actual EAP classroom practices, all or several skills need to be linked as necessary inputs and outputs, as they continually interact during information exchange processes.
III. METHOD

1. Participants

This study is part of a large research project of the needs analysis for Korean postgraduate engineering students. For the purposes of the study, a science and technology university in Korea (College K) was chosen. Since College K is one of the high-ranking institutions in Korea, it was assumed that all the students and lecturers have scholarly motivation in their fields of engineering. Ultimately 21 and 14 interview data were collected from the engineering postgraduate students (KSs) and lecturers (KLs), respectively. As engineering is discipline dominated by males, all the participants in my study were male, and all were Korean.

The KS respondents were studying in a number of different engineering departments. Most students had remained in Korea (60.3%), or had stayed less than one year in an English-speaking or other foreign country (35%). The majority of the KL participants was located in either the Aerospace or the Mechanical engineering departments, and had varying years of teaching experience at College K (less than 1 year to more than 20 years). Apart from one lecturer (KL-1), all the KL interviewees had taught only in Korea.

2. Instrument

For the purposes of needs analysis, survey approaches have been the most commonly employed research methods. For this study, the semi-structured interview (Appendix) was chosen because I attempted to have a systematic and expansive data in a relatively short time period rather than replies by means of a set of pre-defined categories (Cooper & Bikowski, 2007). It generates qualitative data within the loose structure containing key questions and allows the flexibility to ask follow-up questions in individual conversations. The qualitative data are important in determining more precisely the nature of students’ needs and the reasons why the participants think of the issues in certain ways (Cohen, Manion & Morrison, 2007).

3. Procedure

In acknowledging the difficulty of contacting participants, I used the snowballing technique (Cohen et al., 2007) to collect data. That is, after I started with my previously established individuals of engineering students and lecturers at College K, I asked them to introduce their colleagues to me for my research at the end of the interviews. When I interviewed their colleagues, I again asked them to help me by introducing some of their
colleagues of friends, and they were able to do this. In this way I expanded a pool of participants. During the interviews, I mostly discussed in Korean, while I used English to communicate with a lecturer (KL-1). The conversations in interviews were tape-recorded and translated into English, and I differentiated the replies according to academic practices of engineering in analyzing and describing data.

IV. RESULTS

Participants described in depth the most important and the most problematic study skills or strategies for students and the reasons for their judgments in relation to the various academic practices in Korea.

1. Attending Lectures

Attending lectures in English has recently become an important issue for students in Korea, as the opportunities to attend English-medium lectures are rapidly growing. Naturally, students at College K (KSs) had difficulties in understanding the contents in lectures given in English. A doctoral student of Mechanical engineering (KS-7), who had difficulty in note-taking during lectures, attempted to concentrate on listening, took notes only of the key words, and later complemented his notes by reading texts or other resources. For him, listening and understanding is more valued than note-taking in lectures.

When I attend lectures in English, I have difficulties in listening to the lectures, understanding the content and taking notes at the same time, because of course it is not my language. I can nearly manage to listen to and understand the lectures, but taking notes is another problem. So I just write the key words of the lecture and rely on the texts later. (KS-7)

Many engineering lecturers at College K (KLs) described the difficulty of students in listening and understanding complex technical engineering contents in lectures in English, which is different from normal listening. KL-2 from Mechanical engineering stated:

When foreigners join in lectures and seminars, we speak English to discuss with them…. Because technical engineering knowledge is somewhat difficult, students are also very embarrassed in the English-medium lectures. (KL-2)
However, as time goes by, students seemed to become used to and not avoid English-medium lectures. Moreover, students were likely to consider that participation in lectures in English was more helpful, probably because students could be exposed to English as well as subject contents, as KL-1 put it:

The number of students who seem to understand the contents and consider the lecture in English as effective is increasing. In the past, students tended to avoid attending lectures in English, but nowadays no one would avoid lectures only because they are spoken in English. Even if students have a hard time following the lectures, they seem to feel that the lectures in English are helpful for some learning results. (KL-1)

In English-medium lectures, both students and lecturers tended to have difficulties in communicating technical contents, and frequent code-switching between Korean and English is employed. Nonetheless, they seemed to perceive the educational benefits of English-medium lectures for students in Korea, as English is a crucial medium of international communication in the engineering community (Shin, 2010).

2. Presenting Results at Conferences or Seminars

Nowadays, KSs have more chances than before to present at international or local conferences and seminars, as KL-1 explained:

Ph.D. students normally present one to four times, at least once, at international conferences, during the courses. M.Sc. students normally present at local conferences. However, when the quality of their papers is good, M.Sc. students will present at international conferences. (KL-1)

KS-4 of Mechanical engineering remarked that presenting their research findings in English at international conferences was enormously challenging.

It’s very hard for me to present my results in English, although it does not happen frequently. (KS-4)

Although KS-12, a Ph.D. student of Civil engineering, perceived the requirement of prompt, natural and fluent oral communication skills for their presentations, he noted the rare opportunities to practise for it in the local context.

Despite the importance of oral communication in engineering, the amount of time and
chances to practise speaking are relatively limited. Expressing opinions should be comfortable and natural, and we need to communicate effectively and clearly. Speaking should be prompt, without hesitation. (KS-12)

KL-1 also strongly emphasized the need for oral presentation skills for elite students, who would aspire to be qualified members of the international community.

We are teaching high level, highly qualified, elite postgraduate students. As a rule, they are supposed to present their results at open international conferences specializing in Mechanical engineering or Fluid Mechanics… They do have a great deal of anxiety and apprehension about that presentation capability and skills and so on… In order to become a researcher of international reputation, you have to build that stage. If you don’t go through this and if you stay on the domestic market, the domestic stage alone, you can’t become an international researcher. (KL-1)

Numerous KLS appeared to worry about students’ presentation skills. For example, KL-9 from Aeronautics pointed out that the lack of students’ presentation skills originated in the teaching of English in Korea, centred on the training of general reading skills (not oral communication skills) and resulting in students’ lack of English competence and attitudes of reluctance to present their ideas and arguments.

So far, our English education has focused on reading skills. Therefore, in presenting, more precise and better expressions in English are problematic for students. Even if our students did the same things in their research, other foreign students, like American students, present as if they did huge amounts of work. On the other hand, our students express themselves as if they did only small things, although they did a great amount of work. It is a very important issue, I think. This comes from the fact that Korean students cannot use English well, as well as other factors like cultural aspects and personalities. (KL-9)

KL-9 seemed to appeal urgent needs of students’ oral presentation in the global academic community, and express a great concern of English teaching circumstances for engineering students in Korea. On the other hand, KL-13 pointed out the situations of students, as follows:

Students are too busy to spare time to practise presentation separately. They are in the laboratory all day, to obtain the results of their experiments. After getting results, making Power Points and practising twice or three times, they go to present at
international conferences. It’s far from satisfactory… I instruct my students to express at conferences at least 100% of what they have done. (KL-13)

Students work hard and spend most of their time extracting data from experiments in the laboratory, but do not have time for practising oral presentation skills. This situation has led to unsatisfactory outcomes and frustration when students present at international conferences, regardless of the quality of their study. In spite of the need, KL-2 found that his support for oral presentations in English is limited.

They do need and should be trained with some presentation skills. When they go to international conferences, I ask them to do a rehearsal several times, correcting their pronunciation or suggesting using a loud voice to emphasize key points. But usually I cannot give them any further comments about English speaking. (KL-2)

He thus suggested that it is more important for students to get started in speaking with confidence during or as part of English programmes.

So, first of all, I would suggest that English teachers should give students confidence to orally express themselves in English... Students’ spoken English does not need to be very complicated, fluent, well-pronounced and precise. It is most important first of all for English teachers to make students speak out in English. (KL-2)

Presentation skills were crucially valued and demanded by both students and lecturers to participate in international conferences and to become qualified international researchers. KLs attributed students’ difficulties of oral presentation to poor English education, the dominant academic culture and the lack of time to practise presentation skills in the local academic community.

On the other hand, KS-17, who was almost in the last period of Ph.D. course of Materials science and engineering, stated:

When I was at the undergraduate level or at the early stage of a master’s degree, I had great difficulties in presenting my research in English, but now I am used to it. I can manage… to explain my findings in English without much trouble, as far as my research is concerned... I think I have overcome English problems through experiencing the situations over and over again… I have read texts written in English for more than 10 years as an engineering student and have written papers in English for many years. (KS-17)
As students accumulated knowledge of engineering for many years, they seemed to become accustomed to academic practices of the engineering discipline and to acquire the necessary skills in English for the discipline as an integral part of learning.

3. Writing Papers and Theses

Writing papers and theses in English to demonstrate their ideas and findings was considered as a pivotal practice for KSs, as KS-17 of Materials science and engineering stated:

Demonstration of researchers’ findings is mostly done by means of writing papers. It is very important in engineering fields to express actively researchers’ ideas and work by writing papers. Writing is the best way to present convincingly their achievement and the findings of their study. (KS-17)

KSs perceived that writing in English to communicate their work is difficult, although KS-1 tended to be instructed by their supervisors that writing should be distinctive, clear and precise, with understandable structures of English.

Clear, tidy and distinctive expressions in writing are needed in engineering work. My supervisor keeps on saying, "Please use easy English when you write, otherwise others cannot understand your writing." (KS-1)

Without systematic writing instructions for genres and rhetoric of engineering research papers and theses, students seemed to have difficulties in expressing their ideas clearly in formal English academic writing.

Ph.D. students at College K were required to write theses in English and have to publish articles in international journals for graduation. For M.Sc. students, writing dissertations in English is optional. These requirements indicate that writing skills in English are enormously important for students. However, KL-3, a lecturer of Mechanical engineering, commented that students neglected their writing skills until almost the final stage of their academic progress.

Students may not be aware of the importance of writing skills until they write a thesis by themselves… My main target is to make students graduate. To graduate they need to write a thesis in English. (KL-3)

KL-8 from Aeronautics was concerned about students’ deficient writing ability, and
attributed this to students’ lack of English proficiency and lack of skills in the logical development of ideas even in Korean throughout education from a young age. He reported that these deficiencies cause inefficiency for students when writing theses.

Students’ English writing skills are very weak, just like their ability to develop ideas logically... This comes from an elementary level of our educational system. (KL-8)

While many KLS corrected mistakes in students’ drafts, KL-1 expected students to improve writing skills *alone* by reading appropriate models of texts, which include the forms, genres and conventions of writing in the discipline.

The attitude to studying alone and finding out knowledge by getting stuck into books without asking others may not be helpful to develop English oral proficiency... But it is necessary for students to read many good standard samples of technical writings and texts, write in a well-organized way and practise by themselves. (KL-1)

Although lecturers are worried about students’ writing skills, they do not seem to provide additional writing instruction in order to train students as qualified members of the engineering community. In addition, students are not stimulated to learn academic writing skills through English support programmes at College K, because students are busy studying engineering, lecturers normally do not recommend the English courses, or the EAP programmes are not yet well developed to convey special disciplinary conventions for writing, as commented by KL-1.

Students do not seem to rely on English programmes in the language centre. They usually overcome English problems alone by reading a lot of engineering texts and listening to seminars. (KL-1)

These circumstances may be inadequate to train students with appropriate writing skills for the discipline to meet the standards of the global community. Well-organized EAP programmes to improve students’ writing skills for their discipline are critically required for students in Korea, as KL-3 called for:

Students’ English writing skills are poor, so the skills should be improved through proper English education. (KL-3)

Although writing papers was considered as pivotal and difficult, students were expected to acquire writing skills on their own or they delayed learning writing skills until they had
to write theses. This situation seems to call for appropriate EAP programmes for Korean engineering students to learn how to write papers in English.

4. Reading and Surveying Literature

Catching up with recent global research trends, searching for useful information related to students’ own research topics, comprehending the key concepts, understanding specific terminologies and producing students’ written and spoken texts are fundamental practices in reading the literature (Flowerdew, 1994). Although most KSs may be fairly accustomed to reading texts from their undergraduate courses, a doctoral student of Mechanical engineering (KS-8) perceived that he is still in need of speed reading, learning how to grasp the main points and analysing existing texts.

Reading is the basic main skill in analyzing written materials, producing the written and oral presentation of researchers’ own work. Speed reading accelerates the efficiency of research… Reading is important to understand and follow up recent research trend, and to understand clearly the main points of other researchers’ study. (KS-8)

Reading was also considered as a key medium of accessing academic information, because all resources are written in English.

Reading is the prior way to obtain a lot of information from academic literature in the domestic area. All engineering subject materials such as papers, articles, journals are written in English. (KS-7)

At the same time, KL-12 of Aeronautics emphasized that students’ individual understanding and gaining knowledge through reading texts were important in engineering.

It is crucially important to have knowledge of other researchers’ findings and information of the fields before students do their own research. Studying engineering needs more personal understanding. (KL-12)

This except clearly indicates that reading skills are closely connected with understanding the contents of engineering.
5. Supervision

One-to-one supervision did not raise crucial issues for Korean students in Korea, as students and lecturers mostly communicate in their mother tongue. However, with foreign students, supervision is held in English, as KL-1 put it:

When I meet my Korean students personally for supervision, I don’t speak English. But I have other foreign students. For example, I have at the moment a Russian post doc student in my laboratory and in the past I had a Polish student. In that case, there is no other tool for communication except English. (KL-1)

English will become more important during supervision, because the number of foreign students is increasing in Korea. We see here the effect of globalization in the Korean academic context; English is a unique medium of communication among people from diverse nations sharing specific communicative purposes of engineering.

V. DISCUSSION

Respondents indicated that acquiring study skills is dependent upon a clear understanding of knowledge and conventions of engineering. For instance proficient study skills, such as those needed for oral presentations and writing papers, the logical development of ideas, reading and searching for useful information and establishing research directions, are fundamentally premised on acquiring an understanding of disciplinary knowledge, solid engineering contents and cultures. Both students and lecturers were well aware of the importance of specific academic writing skills in the discipline, which differ from those used in other areas or in their daily lives. In addition, KS-17 noted that as he accumulated engineering knowledge of engineering for many years, he was becoming accustomed to academic practices of the engineering discipline and acquired the necessary skills in English for the discipline as an integral part of learning. These examples clearly indicate that for engineers the use of literacy and oracy in English is integrated to the knowledge and epistemology of the discipline.

Korean postgraduate engineering students commonly interact in English in various academic practices, such as participating in lectures, presenting at conferences, writing research papers and reading literature, whereas most students manage study skills for supervision in Korean. Whether a study skill is problematic or not may be dependant on which language is used in the practices. Although Carkin (2005) stated that academic success in general depends on how L2 students manage lectures, textbooks and research
articles, this study demonstrated that there are wider and more complex requirements for engineering students’ academic success, encompassing oral presentations. These findings indicate that the required study skills for postgraduate engineering students are expanding, including more spoken practices in the engineering academic community.

During lectures, competence in listening and understanding was considered to be the first priority, according to students and lecturers. Such competence was considered more important than note-taking, a view which agrees with Ferris and Tagg (1996) and Benson (1989). In previous years note-taking in lectures was more important than understanding lectures and questions raised by colleagues (Zughoul & Hussein, 1985), but note-taking skills are less demanded probably because nowadays students are often given handouts for the lectures at the beginning of the courses.

Recently, as a large number of lectures are given in English due to the globalization policy at universities in Korea, students seemed to be embarrassed and lecturers were concerned about demands on students’ comprehension skills when they listened to complex technical contents in English during lectures. Students are thus expected to have the necessary strategies for lecture comprehension in English, such as the ability to understand the main purpose of the lecture, appropriate turn-taking skills in questioning and answering (Richards, 1983 in Flowerdew, 1994) and identification of discourse markers usual in lectures. In addition, during lectures, situations of code-switching and code-mixing have occurred; that is, the medium of communication seems to shuttle frequently between Korean and English. Under the circumstances, to study effectively and to exchange information appropriately in the lectures, students may require flexible attitudes and strategies facilitating bilingualism.

The students and lecturers described various skills as useful for reading and surveying the literature: speed in extracting key points, constructing meanings from background knowledge, searching and selecting literature relevant to producing students’ own research design, and repetitive reading to understand concepts in engineering. Although students seemed to be familiar with reading texts through long periods of study, reading is still a very demanding practice. This is because students read to perform academic tasks (Donald, 2002), not for pleasure. That is, when students read literature, they are constantly required to process texts. Moreover, although students understand subject terms, they sometimes may not understand examples in texts which have strong cultural connotations, because readers may interpret texts differently when negotiating meanings in different social settings (Parry, 1996; Wallace, 2003). Reading and understanding may also take time. That is, at the beginning, students normally read superficially with partial understanding. As they gain more subject knowledge through wide reading with appropriate influences such as supervisors’ comments, their understanding becomes clearer. Despite the difficulty in reading the literature, students are seldom trained in reading strategies for disciplinary
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contents (Nuttall, 1996 in Flowerdew & Peacock, 2001). Students may require systematic reading instructions for their discipline.

Most supervision is conducted in Korean in Korea, similar to the situations between Cantonese-speaking academic staff and students in Hong Kong (Flowerdew, Li, & Miller, 1998). However, if more foreign lecturers and students come to Korea, more supervision will be offered in English.

In particular, for engineering Ph.D. students to be members of the global academic community, the skills of presenting their own work and findings to the international conferences and journals are inevitably emphasized, because students are eagerly expected to join the community. As "public behaviours" (Coleman, 1991, P. 17), the use of these skills is anticipated to conform to the norms of the global academic community. Although students mostly remain in their local context, all courses in the context are considered as training them to go further, to participate in the global community of practice. Throughout students’ postgraduate courses, writing and speaking practices in the global forum not only accelerate the formulation of their engineering ideas, but also offer opportunities to glimpse the expectations of the international community.

For this reason, nowadays, students are strongly required to present their ideas and research at international meetings and conferences. However, students may face enormous challenges to their English competence and oral presentation skills. Moreover, the mainstream academic culture in Korea does not positively enable students to present their findings and arguments clearly and logically at seminars or conferences. The academic culture in Korea tends to place value upon listening rather than presenting ideas, and students express their findings reluctantly at conferences compared to students from other nations. This may result in serious disadvantages for their research careers, because engineers from different countries may misunderstand the reluctant behaviour of Korean students as a lack of knowledge in their research. In addition, students have limited time to practise oral presentation skills because students are busy eliciting experimental data in laboratories and accumulating engineering knowledge. Therefore students need to be offered more opportunities and space to exercise oral presentation skills and become acquainted with international expectations during their academic years. Such skills include the use of appropriate tactics such as emphasizing key points and providing clear expressions with a confident attitude.

Students and lecturers perceived that writing demands solid logical thinking and clear explanations of problem-solving processes for global publications in the disciplinary community which agrees with Donald (2002), but discipline-specific writing skills have seldom been taught in Korea. Students often seemed to be ignorant of the importance of writing skills until graduation. This situation is similar to those identified by Dong (1998), Jenkins, Jordan, and Weiland (1993) and Casanave and Hubbard (1992), who found that
writing becomes most important as graduate students approach the end of their education in the United States science and technology settings. Even though KLS were worried that students’ writing ability was far behind international standards, there seems to have been very little effort by the faculty in Korea to require students to write regularly, just as Jenkins et al. (1993) and Braine (2001) noted for graduate engineering students in the United States and Hong Kong respectively. KL-1 even expected students to manage the writing dilemmas by themselves. In my view, students’ lack of writing skills may in part come from the lack of opportunities to think and to practise developing ideas logically in their disciplinary context. An engineering lecturer at a university in the United States comments that:

They [students] have to be able to think constructively … judge how competent they are at problem solving and… understand… This is really hard, because (a) the students do not want to, (b) they are not experienced, and (c) their life experience up until now has told them: “Don’t think, it’s inefficient and you might not get the same marks, you may make mistakes.” (Donald, 2002, P. 74)

Having seen the need to meet the requirements of the short-term tasks such as taking examinations or extracting experimental results, Korean students have had little chance and time in which to acquire writing skills in the particular discourse of engineering. Therefore appropriate training for students to think logically and develop discipline-specific writing skills is necessary. EAP programmes can stimulate students in engineering to accommodate the crucial imperatives of thinking and writing logically. This would be extremely beneficial in helping students to accomplish academic tasks and be empowered in the academic community.

In contrast to earlier times, schools and society now encourage Korean students not to remain in domestic settings, but to interact with foreign engineers and participate in global academic practices. Although some actual practices of the academic culture and pedagogy may still largely remain in the Korean tradition, globalization has enormously changed the current academic circumstances, demanding more interactions and communicative skills to enable participation in the global forums of the engineering community. This change has rapidly transformed engineering academics’ perceptions about the needs for sophisticated and diverse skills in English, in sensitising themselves to the international expectations of the engineering academic community. Therefore the current changing academic situation of globalization has significant implications for the renovation of EAP programmes in Korean universities to include multi-skills approaches and discipline-specific literacy.

Finally, facing the current distinctive and urgent needs to manage the daunting tasks imposed by the local and global practices in the community, students at College K seemed
to struggle due to their lack of necessary skills and strategies in English. Most students regretted their limited chances to acquire any formal and informal speaking, writing and listening skills, and ardently sought for more time to practice these skills in or outside English classes. Subject lecturers also acknowledged that students’ language difficulties were beyond the expertise of lecturers to rectify, urging students to find ways to fulfil academic tasks in English by themselves or by seeking special help from English teachers. Well-organized EAP programmes focusing on skills instruction and including discipline-specific literacy and conventions may provide students with better preparation for participating in academic practices in the community.

VI. CONCLUSION

This paper made use of data on engineering students' and subject lecturers' perceptions regarding Korean engineering students' needs of study skills in English. Engineering academics clearly acknowledged the importance of discipline-specific study skills for their study practices, indicating that the use of skills is contextualized in the discipline rather than transferable to other disciplinary areas.

Korean postgraduate students were subject to various academic practices in English such as attending lectures, presenting at international conferences and seminars, writing papers and theses and reading and surveying literature, requiring competence of study skills in the global academic community. Thus the practices in which students need to use English are expanding, and the requirements of discipline-specific literacy are increasing in Korea. In order to participate constructively in the global academic community, students, therefore, seemed to require access to discipline-specific literacy and norms to be or to encourage students to be genuine members of the community. EAP programmes which support students' extended cognitive and literacy needs may help students to meet the communicative tasks in the global academic milieu.

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APPENDIX A
Interview Questions for Students

1. What is your name?
2. Department?
3. Which course are you taking (M.Sc., Ph.D., or Post Doctor)?
4. How long have you studied your subject? What is the goal of your current subject study? Any plans for future study?
5. What study skills are important for your academic success? Do you have any difficulties with the study skills? What are your strategies for your study? Please comment on them.

APPENDIX B
Interview Questions for Lecturers

1. What is your name? Nationality?
2. Department?
3. Which course Korean students have you supervised or taught so far? (M.Sc., Ph.D., or Post Doctor)?
4. How long have you taught engineering? Could you briefly introduce your academic and professional career?
5. Which study skills are important for your students’ academic success? Please comment on this issue.

Applicable levels: postgraduate level education
Key words: study skills, EAP, Korean postgraduate engineering students, needs analysis, academic practices

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Received in April, 2011
Reviewed in May, 2011
Revised version received in June, 2011