Criticality and Flexibility: The Sociocultural Needs of Korean Engineering Students in the Global Community[*]

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This study aimed to analyze the perceived needs of L2 postgraduate engineering students in relation to sociocultural behaviours in an EFL context. Semi-structured interviews were administered in order to examine the perceptions of Korean postgraduate engineering students themselves and subject lecturers in Korea. The research indicated that participants tended to be concerned about their own academic culture in the following four aspects: (1) reluctance to present ideas and arguments; (2) hierarchical relationships between lecturers and students; (3) different study and research approaches; and (4) failure to recognize cultural problems. Considering the sociocultural demands in a global academic community leads to the conclusion that Korean students should be expected to have critical awareness and flexibility in their academic lives. Implications of the findings for effective English for Academic Purposes (EAP) programmes for Korean engineering students are discussed.

Key Words: Korean engineering postgraduates, sociocultural needs, critical awareness, EAP, global academic community

1 Introduction

Today, the demand for more specialized language teaching depending on academic disciplines is widespread. As the conditions under which language learning takes place have changed in the current era of globalization, learners' needs and purposes have diversified (Block & Cameron, 2002; Hinkel, 2006). For this reason, attempts to identify the needs of second language (L2) learners are considered as a key stage of the planning of English language education (Dudley-Evans & St. John, 1998) in the area of EAP. Particularly in academic sectors, L2 learners may have special aspirations and dilemmas for managing sociocultural problems in their local academic contexts as they seek to be members of the global academic community. A number of EAP researchers have discussed sociocultural

issues of L2 students in English as Second Language (ESL) academic settings (Gao, 2011; Jones, 1999; Krase, 2007; Lee, 2009; Leki, 2006; Myles & Cheng, 2003; Skyrme, 2010; Thorp, 1991). However, few researches (Yu, 2008) have considered L2 learners' sociocultural demands related to their behaviours and ways of studying in English as Foreign Language (EFL) contexts in the globalized world. This study thus attempts to analyze the needs of L2 engineering students in relation to sociocultural behaviours in an EFL setting.

In probing the needs of sociocultural behaviours for Korean postgraduate engineering students who wish to be members of the global academic community, I attempted to analyze them from the subjective perspectives of students themselves and subject lecturers in their local academic context, Korea, and to suggest ways of developing desirable sociocultural attitudes, approaches to study and norms in academic practices in the global community. In this study, the *global academic community* refers to the engineering academic society whose purposes, values and disciplinary culture are shared worldwide, while the *local academic context* refers to the academic society which shares certain norms, values, tradition and academic culture in regional settings.

2 Literature Review

2.1 Sociocultural Issues in Engineering

Sociocultural competence and behaviours are important in all EAP contexts. In engineering, in particular, socialization and cultural awareness are crucial issues, because the English language and Anglophone conventions are dominant, accepted as such and shared by the engineering academic community around the world. Nevertheless, these cultural factors have often been neglected (Barron, 1991) in the EAP classes. This is because, as culture is seen as "implicitly and explicitly involved in every aspect" of teaching practices in the community, "this ubiquity fosters an unexamined, taken-for-granted, or commonsense construction of the term" (Atkinson, 1999 as cited in Singh & Doherty, 2004, p. 34).

In addition, where EAP is concerned, many hold to the view that engineering is a culturally neutral discipline that has always represented "a supra-cultural domain" (Pennycook, 1997, p. 259). However, the truth of the matter is that EAP is deeply related to various layers of particular local, ethnic, academic, and disciplinary cultures (Flowerdew & Miller, 1995). Engineering students need to be aware of "the cultural assumptions and social practices of the disciplinary community in order to communicate effectively to their audience" (Canagarajah, 2002, p. 30). Nonetheless, individuals often maintain social norms appropriate to local contexts (Kramsch, 1998b). This may cause cross-cultural misunderstandings amongst

the diverse members of the global community. When L2 students who have maintained certain cultural assumptions throughout their education in their local context come to collaborate with foreign engineers, they may not easily adapt to aspects of the different academic culture. Thus L2 engineering students may suffer from a cultural disjuncture between the internationally dominant culture and their local culture. This is because the globalization of a norm of interconnectivity between nations tends to make minority communities and local academic cultures occupy a marginalized status (Seabrook, 2006).

2.2 Sociocultural Theories in EAP

Given that EAP has to take account of numerous cultural factors which affect L2 students, the field of cultural studies has developed theories and terms in EAP to explain such cultural complexity and to facilitate communication between people who do not share nationality, social origin, expectations, or ways of thinking during global contacts (Kramsch, 1998a, p. 7). Some of the major theories of culture and related studies in academic contexts include the study of the target culture (Ballard & Clanchy, 1984 as cited in Ballard, 1996; Bloor & Bloor, 1991; Jacob, 1987), incorporating the students' culture (Barron, 1991; Connor, 1996; Kaplan, 1966; Mauranen, 1993; Zamel, 1997), intercultural competence (Byram, 1995; Jin & Cortazzi, 1998; Jones, 1999; Kramsch, 1998b; Myles & Cheng, 2003; Thorp, 1991), and critical views of culture. However, these theories except critical views of culture presume "the existence of cultural differences between groups. As such, it assumes a homogenous and stable culture that forms a unique communication style in each culture" (Kubota, 2004, p. 45). Moreover, the dominant culture and conventions are assumed as a norm in the community, so that mutual acculturation among members is difficult to achieve. This circumstance may cause inequality within the community. Therefore, critical views of culture and 'critical awareness' are most desirable for L2 engineering students in the era of globalization, and I will discuss issues concerning critical views of culture in EAP in depth as follows.

In drawing attention to cultural differences between L2 students and the target academic community, students and lecturers are prone to building a set of cultural dichotomies between the East and the West. Kubota (1999) criticizes these essentialized cultural labels and stereotypes, and suggests the need for critical multiculturalism and critical acquisition of the dominant language and culture. Students should apply critical thinking rather than simply assume that one of the cultures is unquestionably better or different in a stereotypical way.

East Asian students are often regarded as introverted and passive in the classroom. This is thought to be because they have been educated mostly in the Confucian tradition of teacher-centered lessons and large classrooms

(Scollon, 1999). These non-native students are considered simply to accept unequal power relations in academic situations, allowing the institution's or lecturers' requirements to dominate. Students tend to have internalized legitimated standard forms of the behaviours of Anglophone native speakers, due to "oppressive forces that… operate in various spheres including education institutions, textbook industries, and mass media" (Kubota, 2004, p. 47-48). In an attempt to identify the features of sociocultural interactions between L2 undergraduate students and faculty in US education, Leki (2006) also observed that students tended to try to deal with the relationships with the faculty by unquestioningly accepting teachers' authority, in ignorance of faculty's expectations. This situation is obviously undesirable, not only for the students' own academic development, but also for the lecturers who expect students to participate creatively and critically in the classroom, workshop or other places, as parts of the academic community.

In this regard, Canagarajah (2002) suggested a critical contact zones perspective as an ideologically desirable approach in the age of globalization, as students hold diverse values, philosophies, ideologies and memberships in multiple communities. Here students with multicultural identities are "encouraged to adopt diverse and creative strategies of communication" (Canagarajah, 2002, p. 40) to construct their knowledge, so that they develop their own critical cultural awareness in complex multicultural academic settings and can challenge the reified cultural assumptions and unequal power relationships between members of disciplinary communities. However, Canagarajah's notion of critical multiculturalism seems to be radical and impractical because students are hardy able to choose the pedagogy which they need in their learning contexts and have to acquire the knowledge of disciplinary culture as a condition of becoming members of the community.

EAP is often blamed for aiding compliance with the dominant culture on the premise of pragmatic concerns. Accepting the critique of the conservative EAP stance, Pennycook (1997, p. 263) calls for critical pragmatism and critical awareness which help students to develop "forms of linguistic, social and cultural criticism," beyond the needs of the specific target discipline. He claims that rather than meeting the apparent needs of the students for academic linguistic skills the means for creating "continuous reflexive integration of thought, desire and action" (p. 266) is necessary. Moreover, Singh and Doherty (2004) have considered the dilemma of EAP teachers in western multicultural classrooms as the main sites of the cultural processes of globalization. For Singh and Doherty, the tightly bound stereotyped notion of culture no longer informs global pedagogic practice adequately. They thus suggest EAP teachers' "critical engagement" (p. 21) in order to make learners active and reflective agents in the ongoing construction of social reality. The critical cultural awareness and reflective thinking of both students and EAP teachers are desirable in the global age, as the community is changing and becoming more diversified and multicultural.

Moreover, Benesch (1993, 2001) suggests that EAP professionals need to develop a critical EAP pedagogy. In the pedagogy, L2 students' ideological positions are accepted, and students are to be "both pragmatic and critical grounded in the demands of students face but open to the possibility of challenging them" in an academic context (Benesch, 2001, p. xvii). It may allow students to face power relationships, "to consciously engage in academic life" and to increase their participation in the academic communities of practice (p. xv). This pedagogy is profitable because both non-native students and EAP teachers are encouraged to have critical cultural awareness and flexibility in developing students' self-initiated learning and in taking more equal roles in the discipline and in the wider community.

2.3 Background

In Korea, stronger demands for high-quality English education emerged from the 1990s, mainly due to the growing socio-political movement of globalization, Korea's open policy towards the world, and its emergence as the information technology society. In particular, in view of the internationalization of universities and of the research in world-class and regional centers of excellence, it has been vital for Korean engineering students to have international collaboration with foreign engineers and adequate communication in English within their disciplines (Gulliver, 2001). Accordingly, several universities specializing in science and technology have offered lectures in English to encourage more foreign students and lecturers to study in Korea, and Korean academic sectors have fast become multinational and multicultural (Shin, 2013). For Korean engineering students, English is a major and dominant tool for communicating with foreign engineers in the local context in performing academic work such as attending lectures and seminars, reading literature, writing papers, presenting at conferences, and conducting research (Cho, 2009; Kim, 2015). However, the quality of engineering education in Korea seems to be threatened by the discrepancy in sociocultural expectations between the local context and the global community. Their sociocultural conflicts are likely to exist when Korean students research with foreign academics (Lee, 2009; Park, 2012).

3 Method

3.1 Instruments

This study has evolved out of a larger research analyzing the needs of Korean postgraduate engineering students (Shin, 2009). In dealing with questions related to sociocultural behaviours, which are too individual to be dealt with by using a set of pre-defined inquiries in a quantitative approach (Cooper & Bikowski, 2007), a qualitative research approach, such as the use of semi-

structured interviews, was necessary. The semi-structured interview consisted of a key question and improvised follow-up questions. The key question was about what sociocultural problems participants have experienced because of cultural differences between students or lecturers of different nationalities in academic contexts (e.g. social interaction with foreign colleagues, or attitude in the classroom or conferences). As the responses might vary depending on their grades and experiences, the additional improvised questions about their study background, aims of study, strategies, institutional systems, emotional factors in their human relationships and so on allowed me to have detailed information and a more in-depth and flexible discussion in order to gain insight into the underlying attitudes and motivations of respondents (Cohen, Manion, & Morrison, 2007).

Table 1. Profile of Interviewed KSs (N=7)

Code	Engineering subject	Course level	Length of stay in foreign countries
KS-1M	Mechanical	M.Sc.	-
KS-2P	Material	Ph.D.	-
KS-3P	Mechanical	Ph.D.	Japan 1 wk
KS-4P	Chemical	Ph.D.	-
KS-5PD	Civil	Post Doc	America 2 mths
KS-6P	Electronic	Ph.D.	France 1-2 wks
KS-7P	Electronic	Ph.D.	Canada 1 yr

Table 2. Profile of Interviewed KLs (N=6)

Code	Engineering subject	Course level	Lecturing experience		
			In Korea	Outside Korea	Total
KL-1	Mechanical	M.Sc. Ph.D.	12 yrs	-	12 yrs
KL-2	Aeronautics	M.Sc. Ph.D. Post Doc	21 yrs	-	21 yrs
KL-3	Mechanical	M.Sc. Ph.D. Post Doc	19 yrs	US 8 yrs	27 yrs
KL-4	Material	M.Sc. Ph.D.	16 yrs	-	16 yrs
KL-5	Aeronautics	M.Sc. Ph.D. Post Doc	21 yrs	-	21 yrs
KL-6	Mechanical	M.Sc. Ph.D.	21 yrs	-	21 yrs

3.2 Participants

For the purposes of the study, an academic institution — College K — was chosen in Korea. The college is recognized as a worldwide leading institution in the field of engineering, and all the participants were presumed to be academically prominent. The summary of the profiles of selected Korean engineering students and lecturers for this paper is shown in Tables 1 and 2.

With the exception of KS-7P, who had studied in Canada for a year on a students' exchange programme, the chosen Korean students (KSs) at College K had mainly remained in Korea. I added letters M, P or PD after the students' codes to show their academic levels (e.g. KS-1M, KS-5PD). Six sets

of interview data were collected from the engineering lecturers (KLs). The majority of KLs had studied in Anglophone countries for their degrees, and all the KL interviewees except for one lecturer (KL-3) had taught only in Korea.

3.3 Procedures

Drawing on my own experience as a Korean L2 speaker of English with a background as an engineering researcher and EAP lecturer at a science and technology college in Korea, I attempted to use snowballing technique to collect data. I started my research by using my previously established personal contacts with accessible lecturers and students at College K.

In my case, "the unique value of the intuitive knowledge of insiders as members of a community" (Ramani *et al.,* 1988) helped me to elicit the relevant qualitative data for research into the particular needs of Korean engineering students during the interview process. When some students seemed to have difficulties in expressing their viewpoints and needs explicitly, I could help them by reminding them of possible responses to my questions. But I was cautious not to influence the contents of their responses, by avoiding any subjective evaluation of their replies. Also, acknowledging that engineering students are normally unfamiliar with concepts such as culture and society, I roughly ordered questions regarding sociocultural issues in the interviews so as to utilize a step-by-step interactive approach. For example, I could first ask them if they could describe any contrasting points in academic cultures or expectations between Korea and the global community. I could then ask them to discuss the difficulties that might arise due to these differences. This would lead interviewees to articulate their concerns with these issues in depth.

I mostly used Korean to communicate with the participants. The comments of interview participants were tape-recorded, transcribed and then translated into English for further analysis and citation. I coded the data according to the major themes of Korean students' sociocultural dilemmas that emerged repeatedly in the data.

4 Results

4.1 Reluctance to Present Ideas and Arguments

Overall, the KSs I interviewed reported that they were reluctant to present their own research outcomes or arguments, although they perceived that presenting these to international journals or conferences are crucial practices. A master's level student of mechanical engineering (KS-1M) attributed this to the academic culture in Korea, which was described as text-based self-study, listening and deferential acceptance of others' ideas, rather than

expressing themselves or criticizing others' ideas. Therefore, Korean students were shown to be deficient in claiming their arguments and in leading others academically, as KS-4P of chemical engineering also noted:

> In high schools, listening to others' opinions is more valued than stating our own arguments. In colleges, we mainly studied by learning how to calculate formulae. Even in the postgraduate school, we rarely have opportunities to train discussion skills. Therefore Korean students tend to be weak in claiming our own ideas or in leading in front of others, while western academic culture is knowledge-centered and students' ideas, suggestions and claims are valued. (KS-4P)

Like KS-4P, KSs often compared and contrasted their attitudes with the behaviours they encountered amongst people in the western countries and were worried about their behaviours, probably because Anglophone academic culture largely dominates in the global engineering community (Wood, 2001).

Additionally, due to the difficulties of engaging in discussions with foreign engineers and asking questions during lectures and seminars because these had been uncommon practices in Korean classrooms (Lee, 2009), a doctoral student of materials engineering (KS-2P) replied that he solves questions alone by searching in books and theses rather than asking questions.

Most faculty members of engineering (KLs) were concerned that students' hesitation in expressing opinions is a problem over articulating their findings and ideas explicitly, particularly in English. This may cause students' work to be improperly valued in the competitive global markets, as KL-2 stated:

> When Korean students go to international conferences, they have difficulties in taking part in debates due to their different study culture and attitude and their lack of English competence. The result becomes a huge obstacle for our nation presenting ourselves in world markets. (KL-2)

4.2 Relationships between Lecturers and Students

Students acknowledged strong vertical relationships between lecturers and students in Korean academic culture. As Park (2012) points out, hierarchy is one of the major social values affecting Korean learners' interactive behaviours in academic sectors. A chemical engineering student (KS-4P) states that in engineering, the hierarchical relationship is particularly stronger than in other disciplines, because supervisors are major sources of experimental topics and powerful mediators of academic success in the discipline.

> My supervisor plays really powerful roles for my study, so I rarely oppose or challenge his ideas. Although I have different ideas from supervisor's ideas, it is extremely difficult and takes time to persuade or overcome him. So I just accept my supervisor's ideas. I have seen a few students who challenged supervisors and they eventually left the research room. (KS-4P)

Therefore most students tended to show respect toward and accept the power relationships with supervisors or lecturers, and rarely raised their own arguments against lecturers' ideas. KS-3P showed some discomfort with the relationships, and described them as never allowing students to challenge lecturers' ideas.

> When students are troubled because their ideas are different from supervisors, we want to argue. However, there are some vertical relationships here. We know that supervisors' knowledge and experience are much broader, but it may be unreasonable that we always need to just follow supervisors' ideas and remain in passivity. (KS-3P)

He considered that these hierarchical situations resulted in non-beneficial outcomes, as they discourage the development of logical ideas and creative thinking while fostering a passive form of knowledge transfer. His recognition seems to have occurred as a result of his contact with foreign academics, and indicates his negative perception of the home culture and behaviours, both of which would seem to contradict the expectations of the global academic community.

4.3 Different Study and Research Approaches

In KS-5PD's experience, students in Korea studied through memorization and the superficial application of mathematical formulae, rather than utilizing reflective and creative approaches. Here he exclusively compared the academic culture in Korea with the culture in the West.

> While, in the West, students are permitted to think freely, Korean people haven't been educated in the environments of creative thinking. Students tend to study within a given framework. There are big differences in the degree of understanding and the way of thinking. The whole structure of papers in the West is more logical. (KS-5PD)

In addition, with respect to Korean engineering institutions, KS-7P described a system that values quantity over quality, thereby hindering the kind of creative and qualitative research that a more knowledge-centered research approach would facilitate in engineering academic sectors.

> Each research lab is pressured to produce numerous research outcomes, because the number of achievements is important to receive funding from outer sources. To get more funds the quantity of results becomes more important than the quality of research. (KS-7P)

On the other hand, KL-3 commented that Korean students and the academic culture in Korea also have strong and positive qualities in relation to studying engineering, such as diligence, mathematical skills, logical thoughts, computer techniques, information technology and analytical ability. He suggested that Korean students should know the benefits of their own study culture, and that students can learn the particular written and spoken genres of engineering by reading internationally shared standard models in technical journals or listening at conferences.

> Our students work hard, and are good at analytical ability, math, logical approaches, and computer and information technology. (KL-3)

Nevertheless, KL-5's comments associated the mismatch between the historical and cultural background in Korea and the western knowledge system with the academically superficial foundations of engineering knowledge in Korea. The academic system for engineering in Korea seems to rely heavily on the dominant Anglophone academic culture of engineering. The perception of study participants is that the framework brought from the Anglophone culture has not been supported by a strong academic foundation in Korea. This may lead to academically somewhat weaker foundations for research in Korean universities. KLs thus suggested Korea-based original research and resources, which in turn can also become assets of the global academic community.

> Korean people need to find a way to maximize Korean culture. Following western culture does not give an opportunity for Korean academic culture to develop. (KL-4)
> In order for us to know something clearly, that knowledge should be concrete and come from our own real situations. (KL-1)

4.4 Failure to Recognize Cultural Oroblems

A few participants considered that the fundamental theory, logic and disciplinary conventions are internationally shared in engineering research and textbooks, and that studying engineering is culturally neutral in the writing and reading of technical texts.

> The most important thing in theses and textbooks is logical development and meaningful communication. Engineering is a subject which solves problems by means of logic; thus, there is not a big difference in study culture in any places in the world. (KS-6P)
>
> There is very little scope for technical writing to be related to cultural differences in any countries worldwide. Most of all, engineering materials are written in English, in Britain or America. So materials are not related to cultural effects, I think. My Polish student and previous Russian student did not have any difficulties because of cultural differences. When I taught in Japan, I did not feel the cultural gaps either. (KL-3)

Engineering subjects were brought into Korea a long time ago, and KLs and KSs may presume that students were accustomed to the disciplinary culture and conventions of engineering. Also, because KSs have usually studied with lecturers who studied in Anglophone countries, they might perceive that they do not have any big cultural discrepancies or problems.

5 Discussion

The data showed a variety of participants' perceptions of the academic culture and sociocultural behaviours depending on their backgrounds, beliefs, experiences, commitments, or power relations in the academic community. Participants illustrated the difficulties concerning students' reluctance to present their own arguments, their lack of questioning, discussing and debating, the hierarchical relationship between lecturers and students, and the lack of creativity in study approaches. Traditionally, students had mostly studied by reading appropriate texts, making few attempts to ask lecturers questions or discuss their studies with others during their courses. Moreover, students had not had much opportunity to participate in the practices of the global community (Kramsch, 2002) by presenting their ideas and interacting with foreign engineers in English. However, given that the movement of globalization has opened possibilities for Korean students to participate more in international forums, postgraduate students at high level institutions have been encouraged to have more frequent academic and social contact with foreign engineers. Accordingly, students in the local context were affected by the dominant academic culture in the global community, and reflected on their own study behaviours, human relationships and value system. Now, as

the academic culture in Korea was generally seen by Korean students to be in contrast to the expectations of the global community, a number of students experienced cultural confusion, embarrassment, crisis of identity and unreasonable power distribution (Huang, 2010), and seemed to criticize the local academic culture. They perceived their own academic culture as problematic, and they were concerned about their academic situations, because Anglophone academic culture and knowledge are dominant in the current globalized academic community of engineering.

However, these perceptions need to be considered with deeper thoughts and care. Many participants exclusively compared their academic culture with Anglophone academic culture. They also seemed to have a dichotomous view of the differences between home and Anglophone academic cultures. This bias is especially the case in a society like Korea, which has mostly been monocultural throughout its history, and has massively been influenced by the scientific knowledge and technology of Anglophone countries in the engineering sectors (Crystal, 2003; Wood, 2001). This perspective seems to reflect and create particular power relations in which the regional group defines itself less positively. Additionally it must be emphasized that Korean students' apparent reluctance to present arguments, ask questions and discuss does not mean that they are actually passive or introverted in their studies, but could be partly due to their academic culture in Korea. They just do not participate in ways that follow certain behaviours of the dominant group in global academic practices.

Moreover, the cultural gap was hard to overcome, because students could not readily discard their home culture and shift to a different one. So they had maintained their own academic culture; that is, they mostly studied by reading the literature and listening to lectures following their local academic culture, rather than accommodating expectations in the global community. In a way, this situation seemed to be a contradiction, and students seemed to struggle between local and global expectations. Lecturers also appeared to have diverse views about how to direct students, because, while KL-2 was concerned about his students' reluctance to present arguments, KL-3 suggested that students sustain their own study culture by reading literature and writing papers on their own.

However, these struggling, self-critical and self-reflective processes can be "crucial elements of critical work" (Pennycook, 1999, p. 345). With this tension, it is hoped that students will attempt to start thinking critically and negotiating between different expectations. In the process of negotiation, students may begin to acknowledge their own cultural values and inequalities in academic situations, as well as the target needs in the global community (Benesch, 2001, p. 63). Any community is composed of diverse individuals; culture varies internally as well as across nations, and cultural diversity has the potential to make the engineering community richer. Therefore Korean students' academic culture can be constructed affirmatively for their own

benefit as well as for the development of a global community. For example, although KS-1M considered listening to lectures as a passive behavior, reflective, critical and active listening can be a productive way of studying. Additionally, as KL-3 indicated, the Korean academic culture has numerous positive aspects such as diligence, respectful attitudes towards academics, logical analytical abilities, excellent information communication technology and so forth. Therefore considering the positive aspects of learning in Korean academic culture, students should be encouraged to follow the advice of Canagarajah (2002, p. 40) who notes that they "have to adopt many subtle and creative strategies of communication to construct" their own way of learning to both build their own identities as community members and constructively engage in the disciplinary practices of the community. It is crucial for Korean engineering students to continuously "shuttle" (Canagarajah, 2002, p. 41) between local and global expectations.

Therefore, students need to have a critical as well as flexible perspective on how power is constructed in the international community and how they can accommodate their own 'rights' (Benesch, 2001) in the current institutional systems. Students should be encouraged to recognize the positive aspects of education in Korea, participate constructively in the disciplinary culture of engineering, and learn effectively and creatively in the community.

Furthermore, given the weaker foundations of engineering knowledge due to the western-based knowledge system in Korea, students should be motivated to develop Korean inventions and establish them as world standard. Korea has endeavored to establish its own technology at a global standard, and its engineers continually have the responsibility to develop more knowledge as global assets, using their local experience and technology and writing and presenting their ideas to the engineering community. These endeavors would allow the study basis of engineering in Korea to be firmer and more concrete, and eventually contribute to the richness and diversity of knowledge of engineering in the community. EAP can help students to express their creative and original ideas to the international community.

In addition, in recognition of students' disciplinary and sociocultural dilemmas, KLs may need to understand students' difficulties, and guide them to be flexible in multicultural and diversified environments. KLs are in a good position to understand the cultural discomforts of students, because they have had their own experience in the engineering discipline in various contexts throughout their careers. Moreover, although hierarchical relationships and respectful attitudes to teachers are established forms of interaction among Korean people, these relationships should not restrict students' creative and independent thinking. Innovative attempts to allow more effective idea exchanges and communications between students and lecturers are necessary in the classroom, rather than mere teacher-dominant knowledge transfer or emphasis on short-term outcomes, quantity over quality of research (the Hankyoreh, 2015).

In fact, a number of participants were ignorant about issues of culture. They believed that the engineering disciplinary culture was similar worldwide, or they were already used to the disciplinary culture of the global community. They seemed to believe that engineering is "neutral rather than cultural and social" (Benesch, 2001, p. 45). This perception may not be profitable for their academic development because, to participate actively and critically, students need an understanding of how people communicate, interact and negotiate in their social communities. In addition, engineering as a human science requires students' interactions with people in order to solve problems in diverse local contexts. Learning languages well also requires the understanding of other cultures and behaviours. Rather than simply taking for granted that the disciplinary culture of engineering is universal, engineering academics should take sociocultural issues seriously; doing so would be a productive learning strategy for their study.

To sum up, both engineering students and lecturers in Korea need to be socioculturally sensitive, critical and flexible members of their study culture as well as of the global community. Flexibility provides possibilities to negotiate with different kinds of study behaviours in multicultural academic contexts. This is because culture also "constantly shifts under the influence of political, economic and technological developments as well as domestic and international relations of power" (Kubota, 2004, p. 38). Such awareness would eventually lead students to work as "social beings…[as] knowing is a matter of participating in the pursuit of the enterprises, that is, of active engagement in the world" (Wenger, 1998, p. 4).

6 Conclusion

This study has attempted to explore needs of sociocultural behaviours of Korean postgraduate engineering students in Korea, which has not yet received sufficient attention in EAP research. Given that globalization posits a great amount of sociocultural tension between local and global expectations, causing identity crises and frustrations for Korean academics, I have argued that flexibility and critical cultural awareness are useful strategies for Korean students to negotiate the sociocultural dilemmas in the global community and the local community. Rather than showing criticism of their own culture and educational system or passively carrying out academic tasks in accordance with the dominant culture of the community, students should learn how to negotiate the tensions and conflicts among members with diverse expectations, to find their own ways of participating, and sometimes to resist creatively and critically in the multicultural global community. This is because globalization is a cultural process rather than fixed acculturation (Singh & Doherty, 2004), and the community is also changing and will be more diversified and multicultural.

At the same time, it is important for Korean engineers to bring their own engineering knowledge to the international community. This involves making more Korea-based innovations and technology to be of world standard, in order for them to obtain proper recognition from the world community and join the competition in the global markets. EAP has an essential role to play in helping Korean engineering students to deploy their own inventions or cultural heritage as human resources for the international engineering community. This procedure may lead to the foundations of engineering knowledge becoming firmer in Korea.

In EAP programmes, students need to have an opportunity to discuss cultural diversity between other nationality members and to critically re-evaluate the taken-for-granted conceptions that have been internalized locally by Korean students (Kubota, 2004). This can provide opportunities for students to reflect upon and share their own experiences of the negotiation of cultural discords and of 'good' reflective resistance in academic settings. In this way, EAP can play a role to bridge students and lecturers from diverse cultural backgrounds, and release tensions between the local and the global in the community. In this regard, innovative and qualitative EAP programmes rooted in long-term goals, encompassing aspects of sociocultural behaviours for Korean engineering students, are urgently called for.

Findings and discussions of this study are limited as it has considered only academically highly motivated engineering participants, which may cause biased results for the whole Korean engineering students. Also in an attempt to examine the needs of Korean students from the perspectives of students themselves and subject lecturers by using semi-structured interviews, it may exclude more in-depth speculations on sociocultural issues. Nonetheless, with my insider's views, the attempt of this study may provide invaluable and informative insights for EAP teachers on L2 engineering students' needs in an EFL setting, and suggest desirable directions of English education for particular groups of L2 learners in the era of globalization. The results might also resonate with students from other countries studying other disciplines who need to study globally across cultural boundaries as they adjust to particular communities of practice.

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