Designing ESP Curriculum for EFL Learners at College of Navigation

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Abstract : *This paper aims to identify what is needed to improve the English for Specific Purposes(ESP) curriculum for English as a Foreign Language(EFL) college learners at navigation school. Different needs from learners and experienced professionals are identified through diversified methods, and the findings from these are analysed and consolidated from a balanced point of view. For this purpose, putting learners at the centre of analysis, identifying their subjective and objective needs serves as a point of departure in formulating the curriculum. Then, the target situation is analysed according to the short-term aim of getting a job, followed by long-term needs for successfully fulfilling future duties as a pilot. Based on findings, it is suggested that ESP curriculum for learners in navigation studies should be focused on the successful language performance of their actual duties and tasks to be given in the future working situations, rather than on immediate needs for getting a job. In particular, special attention needs to be paid to enhancing learners' productive language competences through a series of hands-on trainings and a wide range of extra-curricular activities, specifically for a higher command of oral communication. For this, not only ESP, curriculum for EGP(English for General Purposes) should be systematically structured as ESP-oriented EGP, and naturally move onto areas of ESP in a coherent manner.*

Key words : *ESP curriculum, EFL college learners, navigation studies, productive language competences, ESP-oriented EGP*

1. Introduction

As the world has become more globalised, with significantly increased social and commercial interactions both within and between countries, the navigation industry both in the field of aviation and maritime has shown remarkable growth, acting as a bridge that connects the world(Tajima, 2004). Specifically, since the aviation industry is expected to continue to expand, additional workforce will be needed. This also applies to the Korean aviation market. Two major aviation companies in Korea(i.e. Korean Air and Asiana Airlines) are expected to hire approximately 1,600 pilots by 2014, followed by the introduction of around 90 new aeroplanes by 2018, and significant numbers of pilots are expected to continue to be scouted by or move to other airlines in neighbouring Asian countries each year(Hankyoung.com, 2011). To meet the resulting demand, more aviation schools have recently been established in Korea. The newly established schools, most of which opened in 2011, have tried to develop a well-organised curriculum across all major subjects, and special attention has been paid to English education. This is because English is the official language of air navigation worldwide, as the International Civil Aviation Organisation(ICAO) specifies that all communications between Air Traffic Controllers(ATC) and pilots should be conducted in English(Cutting, 2012); and good communication, as well as

technical proficiency, is critical for safety.

In this paper, therefore, with the aim of improving the English for Specific Purposes(ESP) curriculum in a newly established(as of 2011) air navigation school in Korea, the English needs of students(i.e. first-year aviation school learners) and professionals(i.e. pilots in the Air Force and civilian aviation companies) are investigated using multiple quantitative and qualitative methods, according to the different analytic goals set for each group. First, learners are taken as the centre of analysis, and their subjective and objective needs will be identified in order to serve as a point of departure in formulating the curriculum. Then, the target situation is analysed according to the short-term aim of getting a job, followed by long-term needs for successfully fulfilling future duties as a pilot. Finally, the integrated data from these sources will be discussed for the suggestions of future ESP curriculum design.

2. Needs Analysis and Curriculum Design in ESP

The needs analysis refers to a systematic approach to designing a curriculum by collecting and interpreting various aspects of information involved in a learning situation(Hyland, 2006) in order to develop a very focused

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and well-grounded curriculum. That is, just as 'a through diagnosis' is a starting point of adequate 'medical intervention'(Long, 2005, p.1), needs analysis can be seen as 'the necessary point of departure for designing a syllabus, tasks and materials'(Flowerdew & Peacock, 2001, p.178).

Specifically for an ESP course, the importance of needs analysis cannot be overemphasised; the required levels of the target language(or goal) in relation to the learners' particular roles and responsibilities in future tasks are explicit and predictable, and this allows for the design of a more focused and efficient curriculum(Jones, 1991). That is, needs analysis helps ESP practitioners to determine optimal language learning plans and strategies in a specific context, having considered what the target situation requires and what the target learners' current language level is. To avoid bias arising against one specific source and method, and to arrive at a more complete, valid and reliable picture, the needs analysis should be triangulated by incorporating the different needs of various participants through multiple quantitative and qualitative research methods(Choi and Cho, 2011). The importance of triangulation in needs analysis has been emphasised by many ELT researchers(Choi and Cho, 2011; Long, 2005), who have provided insightful results which cannot be easily detected from one-sided informant and/or research techniques.

Several studies on ESP needs analysis have been also conducted in various areas in EFL(English as a Foreign Language) environments. At the overall structural level of ESP curriculum, Tsao(2011) focuses on how an appropriately balanced general/specific curriculum can be established in an EFL context. In order to implement a successful ESP class in the future curriculum, it was suggested that the learners' basic English skills should be improved through EGP(English for General Purposes), that specialised terms should be integrated into course content, and that ESP instructors should have a flexible attitude to enable their professional development in target ESP areas. To discuss detailed teaching content and materials of ESP curriculum, furthermore, Huh(2006) investigated the business English needs of Korean professionals engaged in various sectors of business English communication. Through triangulation of research methods including a literature survey, semi-structured interviews and survey questionnaires, this research identified what kinds of target contexts and tasks should be prioritised on ESP courses(e.g. fax messages for correspondence, making reservations for business trips, etc.). However, few studies

so far encompass and modulate the views of students and target situations in the ESP situation, or utilise diversified methods for the triangulation of need analysis. This research duly contributes to the understanding of the needs of ESP aviation education, from structural to content levels, by accommodating different parties' views and their perspectives on future course design.

3. Sources & Methods

The aviation department in this study was established in 2011, and the first-year curriculum for initial students was drawn up following a needs analysis. To accommodate the different English needs of two participants groups' in the future curriculum design, various quantitative and qualitative research methods were utilised as specified below.

3.1. Learners

The total number of students in the air navigation department who participated in this study was 26. Two possible future career directions are available after graduation: the Republic of Korea Air Force(hereinafter, ROKAF) or one of several Korean Civilian Aviation Companies(hereinafter, KCAC). More than half of the students'(14 out of 26) future careers were already fixed as they had been conditionally accepted as trainee pilots by ROKAF following graduation. The other students(12 out of 26) were planning to apply for KCAC by meeting the employment requirements of the individual companies, such as pilot certificates with proof of a sufficient number of flight hours and an official English score. The analytic goals and methods established for learners' needs are summarised in Table 1(adapted from Choi and Cho, 2011).

Table 1 Learners' needs analysis

Sources	What should be analysed?		Method
Learners' needs	**Present Situation Analysis** (Learners' perceived needs from an objective point of view)	• Learners' objective linguistic level	• Documentation review of official levels of (1) English on Korean SAT (2) high school academic reports (English) (3) achievements in previous English classes • Unstructured interview • Questionnaire
	Learning Situation Analysis (Learners' needs from a subjective point of view)	• Learners' expectations of the class • Learners' overall satisfaction of previous English classes • Learners' linguistic difficulties and deficiencies • Learners' preferred learning styles and strategies	

First of all, in order to understand the learners' linguistic levels from an objective point of view, or *present situation analysis*(Jordan, 1997), three different sources of documentation which reveal learners' previous English achievements were reviewed. Second, a *learning situation*

analysis(Hutchinson & Waters, 1987) was conducted to investigate learners' needs from their own perspectives. An *unstructured interview* with a student focus group(eight students) was carried out to explore a wide range of ideas from a broader perspective, before formulating a questionnaire. Based on the focus group discussion, a *pilot survey* was conducted with 23 of the 26 students, before the final version of the *questionnaire* was produced, which was written in Korean. This consisted of three major sections:

1. Students' perceived language proficiency, and its importance in terms of grammar, written communication (reading and writing), oral communication(speaking and listening) and in relation to the official language test(e.g.TOEIC, ICAO proficiency test)
2. Evaluation of the current English language services provided by the school and
3. Preferred extra-curricular English education services in the future.

The questionnaires were analysed using descriptive and inferential statistical techniques such as mean scores, t-test, an analysis of variance(ANOVA) and Spearman's rank correlation coefficient(the significance level established in this study is $p<.05$) by the use of SPSS(version 18.0). The same statistical techniques were also applied to an analysis of the questionnaires from the pilots.

3.2. Target situations

Since there are two target situations – ROKAF and KCAC – both fields were examined in this study. A total of 87 pilots who are currently employed by either ROKAF(56) or KCAC(31) participated to provide in-depth insights into fulfilling duties in target situations.

To understand the needs of the target situation(Jordan, 1997) in terms of entering the position and successful job performance, short- and long-term needs were analysed, as summarised in Table 2(adapted from Choi and Cho, 2011).

Table 2 Target situation needs analysis

Sources	What should be analysed?	Methods
Target situation	**Short-term needs** (Short-term goal for entering desired position) • English requirements of target job marke (ROKAF & KCAC) • Desirable focus of English education for getting a job • Desirable organisation of English curriculum(e.g. relevant English subjects, books, etc.)	• Documentation review • Questionnaire • Structured interview (or self-administered questionnaires)
	Long-term needs (Long-term goals for successful job performance) • Expected level of English in target situation • Desirable focus of English education for successful job performance	

First, in order to identify short-term goals, *documentation research* was conducted, such as investigating the English language entry requirements suggested by ROKAF and KCAC via the website of each organisation. The information obtained from the documentation review helped to explain the objective English prerequisites for employment in the target market.

Second, to understand the subjective English needs of the target market in terms of both short-term and long-term goals, a *questionnaire,* written in Korean, was distributed to pilots currently working for ROKAF and KCAC. The questionnaire consisted of two main sections, with closed- and open-ended questions on the following areas:

1. The importance of English for pilots according to the four major language areas – grammar, writing, speaking and the official language test – in terms of 'getting a job' and 'successful job performance'.
2. How to better focus English education for the ROKAF and KCAC career paths in air navigation schools, again with respect to 'getting a job' and 'successful job performance'.

Based on the results of the questionnaires, *structured interviews* and/or *self-administered questionnaires* were conducted for two major reasons: to provide further insights into the questionnaire survey results and to explore additional ideas on future curriculum developments.

4. Findings & Discussion

4.1. Learners' needs

4.1.1. Documentation review

To gain an objective understanding of learners' linguistic levels, official English scores obtained in the Korean SATs, high school academic reports, and English courses taken in previous semesters were analysed. First of all, as per the minimum English requirements required by the university admission office, all students in this department acquired a 3rd grade or above in the Korean SATs(minimum cut-off average is top 24.69% as of 2011) and the same grade in high-school academic reports(top 23%), which evaluate the English performance of all test takers by assigning a grade of 1 to 9. Even though it is difficult to ascertain learners' overall language proficiency using these grades because the focus of both tests is significantly biased toward reading and listening, it is reasonable to claim that the students have sufficient knowledge to keep pace with general college-level English courses.

This is also demonstrated by the learners' achievements in one of the general English courses taken(i.e. English 1)

in the second semester, in which learners' performances were superior to those of students in other majors: out of 56 students, the average score of the target learners(26 students) was 88.69 points, while that of the other learners(30 students) was 80.07 points. In addition, out of 26 students, 13 received a grade A(the total number of As awarded was 16), and 10 received grade B(out of 17).

In order to assess learners' English proficiency more precisely, however, official pre-assessment English tests which reflect and are directly related to the requirements of the target situation are necessary at the beginning of the first year. Learners' language levels in each specific area could then be measured and compared with those of the target situation more thoroughly, and would enhance efforts to improve the language curriculum by identifying shortfalls between learners' abilities and target requirements. This test should be conducted on a regular basis in order to continuously monitor the learners' progress.

4.1.2. Focus group unstructured interview

As a starting point from which to investigate learners' subjective needs, an unstructured interview with a student focus group was carried out. Learners in the focus group generally agree that the English courses in the school are just an extension of high school English education, which are usually lecture-oriented and grammar-based and rely on somewhat monotonous teaching methods. In other words, they perceive that the classes have been designed to improve certain test-taking skills, rather than developing the actual communicative skills required in job markets via a diverse range of teaching and learning activities. These issues are illustrated by one of the students' comments during the unstructured interview.

We had mostly focused on grammar and reading comprehension for the Korean SATs throughout high school … but we can't apply what we have learnt into our real English communicative situations. As you can see, the same situation occurs in the university classroom. We think the direction of English class should be changed to enhance our real communicative competencies because we believe we have studied grammar enough and we can study it by ourselves now.

Based on the findings from the discussion, the students' expectations for the future direction of the English curriculum were investigated in more depth through the questionnaire survey with reference to three major issues specified in 3.2.

4.1.3. Questionnaire

The pilot survey, which was conducted with 23 students,

confirmed that the issues raised by the focus group can be generalised to the whole group. As for the findings of the final version of the questionnaire, in response to the statement 'English is important in my major area and future career path', learners indicated the importance of English with a mean score of 4.92. The next question was designed to assess learners' perceived importance of specific domains of English for their future career path, and their perceived proficiency in each area scales ranged from 'very low'(1) to 'very high'(5). The results are summarised in Table 3.

Table 3 Learners' perceived language proficiency and the importance of specific domains of English for their future career path

Domains of language(SD)	Oral communication	Written communication	Official English tests	Grammar	ANOVA	
					F - value (p-value)	
Perceived Language Proficiency(A)	2.58(.99)	2.88(.52)	2.35(.56)	2.50(.76)	2.498 (.064)	
Perceived Language Importance(B)	4.65(.63)	4.15(.61)	3.81(.94)	3.69(.79)	8.525 (.000***)	
B-A	+ 2.07	+ 1.27	+ 1.46	+ 1.19	4.040 (.009**)	
Paired t-test	-9.102	-8.323	-6.540	-6.475	** p<0.01.	
t-value (p-value)	(.000***)	(.000***)	(.000***)	(.000***)	*** p<0.001.	

In terms of the perceived proficiency of each language area, the students self-evaluated using relatively low mean scores in general, ranging from 2.35(official English test) to 2.88(written communication). The *ANOVA* identified that the differences across these four mean scores were not statistically significant(F=2.498, p>.05). In terms of their future career path, however, their perceived importance of these four areas of language significantly increased with a 99.9% confidence interval, as proven by the t-test, as follows: *oral communication*(t=−9.102), *written communication*(t=−8.323), *official English tests*(t= −6.540) and *grammar*(t= −6.475). Furthermore, the ANOVA(F=8.525, p<.001) revealed that statistically significant differences among these four domains exist, from *grammar*(3.69) to *oral communication*(4.65). The area learners rated as most important was *oral communication*, and the gap between learners' perceived proficiency and the importance of *oral communication* was the biggest of all(2.07). On the other hand, *grammar* was assigned the lowest importance, and showed the smallest gap(1.19). *Spearman's rank correlation coefficient* proved that the learners assigned more importance to the areas in which they perceive there to be more gaps, with a 99% confidence interval(r=0.556, data not shown). It can be said that learners recognise that their proficiency in terms of *oral communication* is significantly lower than the perceived requirements of the target job

market, and therefore they feel that *oral communication* should be prioritised within the English curriculum by changing the focus from *grammar* and/or *grammar-based official language tests*. This is also illustrated in one of the students' comments:

The English we learned from class is ... what to say ··· "irrelevant" to our future work. We thought the course we will be learning would be a kind of English conversation or discussion class, but it was just a TOEIC class focusing on grammar. Aviation Practical English as well ···We expected this to be a course for learning practical radio conversations between pilots and air traffic controllers, but it was like aviation service English. Even worse, the class was focused on grammar. We really want the school to focus on our English proficiency, not on the TOEIC score. I know the TOEIC will be very important to get a job but I am sometimes afraid that I might not understand what air traffic controllers say and I might not speak appropriately ··· in the case of an emergency. Because our job is directly connected to passengers'lives.

Interestingly, however, even though the current curriculum emphasises the TOEIC(two classes out of three), and on solving grammar questions, which was one of the students' main complaints, their perceived proficiency in *official English tests*(e.g. TOEIC) was the lowest of all. It therefore seems reasonable to conclude that the focus on official English tests is necessary, even though learners lack motivation in this area.

In addition, students' overall satisfaction with the English courses is relatively low(2.77 on average), as specified in Table 4.

Table 4 Learners' satisfaction and perceived importance of language courses.

Evaluation criteria(SD)	Teaching methods	Diversity in teaching content	Course book selection	Number of students	Appropriate homework assignments	Fairness in evaluations	Class hour
Importance(A)	4.12 (.952)	3.85 (.881)	3.65 (.846)	3.65 (.936)	3.23 (.908)	3.62 (.852)	3.58 (.945)
Satisfaction(B)	2.46 (1.029)	2.35 (1.018)	2.58 (1.102)	3.00 (.938)	2.46 (.989)	3.15 (.675)	3.42 (.578)
A-B	-1.654	-1.5	-1.077	-0.654	-0.769	-0.462	-0.154
Paired *t*-test							
t-value (*p*-value)	-6.677 (.000***)	-5.733 (.000***)	-3.969 (.001**)	-2.952 (.007**)	-2.704 (.012*)	-2.132 (.043*)	-0.891 (.381)

* p<0.05. ** p<0.01. *** p<0.001.

The *t-test* revealed statistically significant gaps between students' comparatively low levels of satisfaction and high levels of importance. These areas include *teaching methods*(t=-6.677, p<.001), *diversity in teaching content*(t=-5.733, p<.001), *course book selection*(t=-3.969, p<.01), *number of students*(t=-2.952, p<.01), and *appropriate homework assignments*(t=-2.704, p<.05). Once again, this matches the view that teaching content is mostly focused on *grammar* and *TOEIC*; *teaching methods* are predominantly biased towards monologic lecturing; and

homework assignments mainly involve watching online video English lectures, which are regarded as top-down, monologic education. All of this seemed to contribute to learners' low levels of satisfaction with the overall English education services of the school, with a mean score of 2.04, and also negatively influence their perceptions of the school as a reliable English education service provider(2.2).

Finally, the last section was designed to identify students' needs in terms of extra-curricular English services, and their preferred types of learning. Five-point Likert scales from 'strongly disagree(1)' to 'strongly agree(5)' were utilised in this section. Responding to the first question, agreed with the statement 'I need more extra-curricular English services from the school', and detailed results can be seen in Table 5.

Table 5 Mean responses regarding learners' preferred extra English services

Types of preferred language services(SD)	Special lectures with invited outside specialists	Various kinds of audio-visual learning materials	English clubs or study groups	Attending English courses in other institutes	Internet-based lectures
Mean score	4.15(.68)	3.53(.76)	3.42(.95)	3.19(.98)	2.69(1.09)

The language service that students most want to be provided with is special lectures with *invited outside specialists*(4.15). This was also highlighted through the unstructured interview and the pilot study open-ended questions. Learners expressed their desire to learn specialised English such as aviation English and this also surfaced in their wish for some types of *official English tests*(e.g. ICAO proficiency test) from experts in the field, rather than EGP language teachers at the school. This reflects their desire to learn more professionally focused English from teachers who have a considerable understanding of the target area. The least preferred service was *internet-based lectures*(2.69), which are currently provided and were negatively evaluated as a monologic way of learning. The desire for actual engagement in learning is also reflected in the relatively higher preference for *English clubs* or *study groups*(3.42), which requires mutual interactions between participants. In addition, the preference for *various kinds of audio-visual learning materials*(3.53) seems to suggest that more diversified learning sources are needed, considering that diversity in *teaching content*(2.35) and *course book selection*(2.58) in current English classes were negatively evaluated.

Taken together, students' overall satisfaction with the programme is fairly low, and this has caused learners to

form a negative image of the school as a reliable English education provider. The main reasons for this can be summarised as follows: first, learners place more importance on successful job performance once they become professional pilots, rather than on immediate, visible and objective language requirements for getting a job. That is, meeting a certain level of job entry requirement through *official English tests* is certainly an objective need, but their subjective wants focus more on actual job performance in the future working environment. Second, learners appear dissatisfied with the fixed English curriculum, which reduces learners' autonomy and motivation for learning by not permitting learners to choose a subject they need and/or are interested in. Learners wish to take part in various extra-curricular activities that are specifically designed to enhance their oral communication competencies through *English study clubs* and with *various audio-visual materials*. Finally, learners desire not only to improve their general oral communicative skills, but also specialised spoken English in their target field, and would like to be taught by specialists in the air navigation field. Hence learners perceive the qualifications and knowledge of EGP teachers to be inadequate for ESP purposes.

4.2. Target situation

The needs of the target situation were investigated from two different perspectives - students' short-term needs(to secure a job), and long-term needs(to perform successfully in a job) - in order to evaluate the target market's needs and identify how to respond to the various points of view expressed by the study participants when revising the curriculum.

4.2.1 Documentation

First, in order to identify the English requirements of the target job market in terms of short-term needs, the minimum requirement of English requested by ROKAF(600 TOEIC points as of 2011) and KCAC(800 TOEIC points plus a 2nd-level G-TELP speaking test, although higher grades are preferred, given the intense competition for positions) were identified from the documentation review. In terms of the speaking requirements of KCAC, learners at the 2nd level(in the G-TELP speaking test) are considered 'high-advanced' speakers who can fluently deliver their ideas and make appropriate suggestions in terms of 'content', 'grammar', 'fluency', 'vocabulary' and 'pronunciation', even when an unexpected situation is encountered(G-TELP, 2012). In this perspective, whereas

KCAC requires a high level of English proficiency in all different areas of language components including listening and speaking, the ROKAF requirements are less demanding.

4.2.2 Questionnaire and follow-up interviews

Through the questionnaires distributed to 87 pilots in ROKAF(56) and KCAC(31), pilots' opinions on their English needs were sought in terms of short-term and long-term goals based on the same categories presented to the learners.

Table 6 Experienced pilots' views of the perceived importance of English in relation to short-term and long-term goals

	ROKAF			KCAC		
	Mean scores(SD)		*T*-test	Mean scores(SD)		*T*-test
	Short-term needs	Long-term needs	*t*-value (*p*-value)	Short-term needs	Long-term needs	*t*-value (*p*-value)
Oral communication [a]	3.30(.93)	4.10(.79)	-6.08 (.000***)	4.30(.64)	4.64(.65)	2.766 (.009**)
Written communication [b]	3.07(.82)	3.60(.84)	-4.486(.000***)	3.81(.69)	3.88(.56)	-0.701 (.488)
Official English test	3.16(.94)	3.50(.92)	2.355 (.022*)	3.15(.87)	3.18(.91)	0.19 (.851)
Grammar [d]	2.93(.84)	3.16(.79)	-2.297 (.026*)	3.38(.82)	3.35(.64)	1.816 (.801)
Average	3.11(.89)	3.59(.90)	-7.402(.000***)	3.66(.87)	3.76(.90)	1.574 (.118)
ANOVA F-value(*p*-value)	1.745 (.159)	12.751 (.000***)		13.486 (.000***)	31.231 (.000***)	* <0.05. ** p<0.01. ***p<0.001.
Scheffe's multiple comparison test	a=b=c=d	a>b, a>c a>d, b>d		a>d, a>c, b>c	a>d, a>c; a>b, b>c; b>d	

In terms of previous job-seeking English environments(i.e. short-term requirements of the target situation), the *t-test* proved that the pilots in KCAC assign more importance to all areas of English than those in ROKAF, with a 99.9% confidence interval(t=-4.350, data not shown).

From ROKAF's perspective, no area of language is significantly more important than any other with respect to getting a job, as revealed by the *ANOVA*(F=1.745, p>.05) and confirmed by *Scheffe's multiple comparison test*(a=b=c=d). From the KCAC pilots' perspective, on the other hand, the degree of importance for each of these areas statistically differs, as demonstrated by the *ANOVA*(F=13.486, p<.001) and supported by *Scheffe's multiple comparison test*(a>d, a>c and b>c): *oral communication*(4.30) is the most critical area, followed by *written communication*(3.81), while *official English tests*(3.15) are regarded as the least significant factor in getting a job. Thus, considering that the highest and lowest importance were respectively attached to *oral communication* and *official English tests* when getting a job, it seems reasonable that increasing oral communication

skills and switching the focus of education to oral communication, rather than the official English tests, is recommendable in the context of an air navigation school language curriculum. This is also in line with the results of the learners' perceived importance, and desires.

In addition, although the level of perceived importance of short-term English needs differed somewhat between the two groups, around 70% of the pilots responded that 'the necessities and importance of English for air navigation college students in both career paths' are identical or similar(69.15% in ROKAF and 67.25% in KCAC), and accordingly that learners wishing to apply for ROKAF should achieve the same English qualifications as those required from learners aiming for KCAC. In the *follow-up interviews*, three major reasons for this were suggested from ROKAF pilots' perspective: smooth communication with the US Air Force during joint military exercises(which are on the increase) increased opportunities for promotion and increased opportunities to take part in training and development courses and enhanced career development opportunities, usually by moving to KCAC after leaving ROKAF.

Regarding the English needs of the current working environment for successful job performance(i.e. the long-term requirements of the target situation), the two groups differ slightly compared to the responses regarding short-term needs. On the whole, the *t-test* revealed that ROKAF pilots viewed English as increasing in importance long-term in all domains(t=-7.402, p<.001 on average) whereas KCAC pilots did not differentiate between short- and long-term needs(t=1.574, p>.05 on average). The only area that meaningfully differed in the KCAC data was *oral communication*(t=2.766, p<.01). In addition, the importance of the *official English* test in the ROKAF data is almost identical or slightly higher than in the KCAC data for both short-(+0.01) and long-term needs(+0.32), whereas the other areas are all lower than those of the KCAC data for both short- and long-term needs. In the *follow-up interviews*, it was explained that civilian pilots must possess a certain level of English just to meet legal requirements, whereas for Air Force pilots higher official English scores provide a wider range of opportunities for further education and promotion.

The above results clearly show that the degree of importance attached to various parts of the English curriculum by the stakeholders cannot be judged by external criteria alone. As previously observed, KCAC has more explicit language requirements, and demands higher marks in the official language test than ROKAF, suggesting that the English needs of ROKAF pilots may be less of a priority than those of KCAC. However, respondents revealed that proficiency in English can have a positive impact on long-term career goals. Hence all of this reveals how insiders can provide additional insights for curriculum designers into supposedly explicit external criteria. That is, this indicates how important listening to the voice of those in the target situation is when it comes to aspects that other stakeholders(e.g. learners, lecturers and the school) cannot speculate on without actual engagement in the target field.

More than two-thirds of the pilots(69.18%) agreed that English education needs to be centred on actual job performance, rather than merely on meeting entry requirements, as the following interview extract suggests:

> It is important to modulate those two in college English education but I think the focus should be more on the actual performance in the future job market. Because it takes considerable time to familiarise oneself with the technical terms and phraseology, and the specialised communication is directly related to the safety of flight, especially if an abnormal situation occurs. And as we are well aware, there are no other alternative educational institutions for college learners to learn this, not like general English.

This demand for more emphasis on successful job performance in college education coincides with learners' needs. As suggested in other interview extracts with pilots, 'repetitive language training of specialised terms and language' will enable learners to 'get used to' this language and will ultimately improve safety. In this sense, the 'air navigation school needs to connect college education to the target job market'.

In addition, ESP based on *oral communication* should be at the core of the language curriculum. As indicated in the structured interviews, however, EGP should be also taught as an assisting tool of ESP to enable smooth and effective communication in various situations, with a particular focus on different varieties of English accents: for example, to enable conversation with foreign co-workers during overseas layovers, and with the ATC tower in various irregular situations, which requires a general English proficiency beyond the use of technical terms. Not only this, most pilots claimed that the importance of written communication(ranked second-highest in importance in both long-term and short-term situations by both groups) cannot be underestimated. A high level of reading and writing skills is required in order to understand aircraft manuals and air navigation instructions, which are mostly

written in English, and also to report several types of major and minor incidents/accidents during flights.

5. Suggestions and Conclusion

In this paper, the various needs of air navigation learners and experienced pilots were investigated using multiple quantitative and qualitative methods, and this approach to needs analysis enables us to understand and accommodate the needs of different parties. Based on the findings, several suggestions for future curriculum design can be made, as follows.

First, the English curriculum of air navigation school needs to be focused on learners' future working environment, rather than their immediate needs of getting a job, considering that highly technical and specialised linguistic abilities are required and that this language training should be reinforced over a considerable period of time. This implies that the focus of ESP curriculum should pinpoint at training learners to be fully acquaint with core duties and tasks of the target job, regardless of their different career direction after graduation, or whether to join ROKAF and KCAC in this case.

Second, the curriculum should be based on enhancing learners' productive language skills such as oral and written communications by changing the lecturers' top-down and monologic teaching styles to communicative language teaching, by providing various kinds of extra-curricular activities as supplement to language learning, and by making the English curriculum more professionally focused with the aid of specialists possessing a considerable hands-on experience in the target field. These all approaches should be established on the in-depth consideration of how to train ESP learners to be competent at producing language in the actual communicative business environment as an active communicator.

Last but not least, considering that attaining a high level of ESP competencies becomes available when learners have a solid background knowledge of EGP, the relationship between EGP and ESP also needs to be rethought and remodeled as 'ESP-oriented EGP'. In order to move towards this, target working contexts, which can be dealt with as EGP subjects, should be defined. As the pilots suggested, general English proficiency required in various job-related situations, such as smooth communication between co-workers, at foreign airports, and during stopovers, are good examples of this. For this, further discussion is needed on how the curriculum can ensure that a focus on EGP can then systematically and naturally move onto areas of ESP in a coherent manner, and how lecturers within each domain can cooperate successfully.

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