



## English Language Proficiency and Curriculum Development for Air Traffic Control

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### Keywords:

Language Skills  
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### ABSTRACT

The aim of this study was to investigate the needs of students in the Air-Traffic Control department. Participants of the study were 30 students in the final semester at the Technical College of Civil Aviation and Meteorology Libya, (TCCAM). The information of the students' needs was obtained through a descriptive questionnaire consisting of the students current & target needs known as necessities, wants and lacks. The questionnaire results highlighted the most critical English skills needed: speaking and listening. Additionally, the findings identified several important topics - referred to as necessities- that should be included in the syllabus. However, the results manifested some gaps (lacks) between the English topics that should be learnt with the topics that the students had already learnt. Additionally, the students expressed specific preferences regarding the English learning process. The findings, also, revealed the degree of importance of language skills which were necessary for the students future career and indicated their strong needs to improve those skills as a result of the learning styles and the teaching materials used. Moreover, the findings demonstrated a strong willingness among students to improve their speaking and listening skills in English and that the students' dissatisfaction with their teachers, teaching methods, learning styles and input length was clearly identified. Therefore, results of this study will hopefully be essential for the ESP practitioners, aviation English teachers and teaching material designers to improve the quality of the ESP syllabus, more specifically, the aviation syllabus.

### إنقان اللغة الإنجليزية وتطوير المناهج الدراسية لرقبة الحركة الجوية

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### الكلمات المفتاحية:

المهارات اللغوية  
اللغة الإنجليزية في مجال الطيران  
مراقبو الحركة الجوية  
تحليل الاحتياجات  
احتياجات التعلم  
مراقبة الحركة الجوية  
الإنجليزية لأغراض محددة  
تدريس اللغة الإنجليزية لأغراض خاصة

### الملخص

استهدفت هذه الدراسة إلى التعرف على احتياجات طلاب قسم المراقبة الجوية. كان المشاركون في هذه الدراسة 30 طالبًا في الفصل الدراسي الأخير في كلية تقنية الطيران المدني والأرصاد الجوية في ليبيا. تم الحصول على بيانات احتياجات الطلاب من خلال استبيان وصفي عن احتياجات الطلاب الحالية والمستهدفة المعروفة بالضروريات والرغبات والواقع. أظهرت نتائج الاستبيان أهم مهارات اللغة الإنجليزية المطلوبة وهي التحدث والاستماع. أظهرت النتائج أيضًا العديد من الموضوعات المهمة (الضروريات) التي كان من الضروري تضمينها في المناهج الدراسية. كذلك أظهرت النتائج بعض الفجوات (الواقع) بين مواطنين اللغة الإنجليزية التي ينبغي تعلمها مع الموضوعات التي سبق للطلاب تعلمها. علاوة على ذلك، كان لدى الطلاب رغباتهم (احتياجاتهم) المتعلقة بعملية تعلم اللغة الإنجليزية. وكشفت النتائج أيضًا عن مدى أهمية المهارات اللغوية الضرورية للمهنة المستقبلية للطلاب وأشارت إلى احتياجاتهم القوية لتحسين تلك المهارات نتيجة لأساليب التعلم والمواد التعليمية المستخدمة. علاوة على ذلك، أظهرت النتائج أن رغبة الطلاب في تحسين مهارات التحدث والاستماع في اللغة الإنجليزية كانت قوية، كما تم تحديد عدم رضا الطلاب عن معلمهم وطرق التدريس وأساليب التعلم و مدة زمن المدخلات بشكل واضح. لذلك، نأمل أن تكون نتائج هذه الدراسة ضرورية لممارسي تعليم اللغة الإنجليزية لأغراض تخصصية ومعلمي اللغة الإنجليزية في مجال الطيران وصمم ملخص التدريس من أجل تحسين جودة منهج تعليم اللغة الإنجليزية لأغراض تخصصية، وبشكل أكثر تحديدًا، مناهج الطيران.

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## 1. Introduction

ESP is the process of designing and developing teaching materials for a specific course that are tailored to the needs of students in a particular field or profession. Before beginning this whole process, a needs analysis should be carried out.

Needs analysis (NA), according to Dudley-Evans and St John (1998), is the milestone of ESP field which helps to tailor a subject-specialist focused course. Needs analysis is the process which allows language teachers and syllabus designers to improve and develop syllabus quality, check students' progress and to maintain the efficiency of teaching methods and learning styles.

Need analysis is a set of activities which involves language teachers and syllabus designers to collect information about what learners need in the present and target situation. This amount of information is useful to design and shape the intended course. Some language scholars such as, Dudley-Evans & John (1998); Hutchinson and Waters (1987) created a framework in collecting the data needed which can be used as inspiring reference for syllabus designers and course teachers to rely on.

Researchers, such as, Hutchinson and Waters (1987) stated that target needs can be clearly divided as follows: 1) necessities, which is the information related to the needs in the target situation, 2) lacks, that is the information about certain gaps between what should be taught/learnt in the course and what have been taught/learnt already, and 3) wants, which is the information pertaining to the students' wants during the learning process. Therefore, the information obtained from those needs can be used as a rationale to decide what materials, teaching techniques or activities must be employed in the classroom. However, aviation is an international a fast-growing industry which involves many different languages. As a result, the International Civil Aviation Organization (ICAO) has declared that English is the medium of communication between all pilots, air-traffic controllers and the ground crew, and that English is the official language of aviation. As a matter of fact, aviation English is different from English used for general purposes, that is to say, aviation English is part and parcel of an ESP course, that is English for Specific Purposes. Like other industries, Civil Aviation always maintains people's life and wealth of airline companies as its first priority since the language used in aviation is one element that may have a potential threat on the safety of flights and passengers. Therefore, Aviation English should set specific objectives for its trainees to follow. Trainees are either students or communicators in a working field. However, statistics show that three major accidents, with over 800 fatalities, were attributed to insufficient English proficiency.

Moreover, International Civil Aviation Convention (ICAO) stated that there are three ways where language deficiency might result in accidents and these are as follows:

1. The incorrect use of standardized phraseologies
2. The lack of plain language proficiency
3. The use of more than one language in the same airspace.

In this respect, It is worth mentioning that the type of English used in aviation industry is related to certain tasks and specific works done in each division. One of the main divisions in civil aviation is the Air Traffic Control in which the English used for ATCs is far different from the English used or air traffic maintenance engineers. This type of English is only for pilots, ATCs, or flight attendants who are supposed to perform specific tasks. Therefore, based on the regulations stated by the Libyan civil aviation authority, there are certain duties that are only performed by the air-traffic controllers in order to ensure the continuing safety procedures of an aircraft. These duties are the cornerstone to pave the way towards a successful teaching and learning program in educational and training institutions providing students with the required knowledge about their expertise to perform their duties after graduation.

The technical college of civil aviation and meteorology (TCCAM) is one of the technical and vocational educational institutions which belongs to the higher ministry of technical and vocational education and where the main target is to equip undergraduates with the required knowledge for their target profession in different fields of aviation such as air-traffic control, aircraft maintenance, meteorological studies, roads and runways, communications and navigation systems,

etc.

At this educational institution, the English teaching materials employed by teachers at the TCCAM should be specifically oriented towards its students' target needs. In other words, the teaching materials or syllabus designed for an aviation course should teach what they are supposed to teach in order to meet the needs of the air-traffic control students. From this perspective, the researcher found that the English materials used by the teachers and instructors in this institution were not far different from the other English materials used for general purposes nor they were designed for aviation purposes and as a result there was an urgent need to carry out a need analysis.

Thus, this research was conducted to investigate the learners' needs in learning English for the air-traffic control purposes and these needs were analyzed through the following research questions:

1. What are the English language needs of the air-traffic control students at the TCCAM with reference to lacks, wants, and necessities?
2. What are the expectations of the air-traffic control students at TCCAM towards Air-traffic English courses?
3. What are the perceptions of Air-traffic control students at the TCCAM towards their teachers and learning styles?

Therefore, in order to answer the questions of this study, the researcher decided to carry out this research to find out the current and target needs of the ATC students.

## 2. Review of Literature

### 2.1. Aviation English

The objectives of Aviation English training programs, according to the International Civil Aviation Organization (ICAO) (2009), have been defined as follows:

First, the use of operationally relevant, work-related language. Second, the development of communicative language skills. Third, the coverage of all six ICAO Rating Scale and Holistic Descriptors skill areas. The final goal is to master the Achievement of ICAO Operational Level 4 in all six skill areas.

Therefore, ICAO (2009) defined plain language as the type of language required to use effectively in the non-standard, abnormal or emergency situations where pilots and air-traffic controllers face and where standardized phraseology is insufficient (Day, 2004; Fox, 2007).

It is worth noting the ICAO Language Proficiency Requirements (LPR) refer to the ability to speak and understand the language used in radiotelephony communication and that Proficient speakers must communicate effectively in voice-only (telephone/radiotelephone) and also in face-to-face situations. Also, in voice situations, that is, the communication between pilots and air traffic controllers and face-to-face interaction that both pilots and air traffic controllers may encounter in any situation.

International Civil Aviation organization (ICAO) in 2008 set standard English and required operational level of proficiency for both air traffic controllers and pilots since communication is one of the main areas in aviation as to ensure safety of passengers travelling by airplanes all around the world.

Furthermore, the ICAO set a condition stating that all flight crews and ATCs must prove their language proficiency requirement by mastering the Operational Level 4 of the ICAO Language Proficiency Rating (LPR) Scale.

In addition to that, the ICAO language proficiency requirements are only concerned with aeronautical radiotelephony communications which are specifically apply to Air-traffic controllers and flight crews. These requirements entail a special use of standardized phraseology that has been developed and approved by ICAO as well as the use of plain language.

Therefore, ESP Language and communication skills have always been of a great concern in technical & vocational higher education in designing any language course since satisfying students specific needs, using specific teaching methods, specific activities and specific language content pertaining to certain practices have always been of a great interest in the ESP research.

### 2.2. Needs Analysis (NA)

Needs analysis according to, Nunan (1988), has been defined as a vital

asset for teachers of ESP in order to obtain an idea about what their learners need, lack, or want to reach their target goals. NA is referred to as the cornerstone of ESP and its proper application will result into a focused course (Dudley-Evans & St John, 1998). ESP is seen as the starting point of adopting a framework for ESP course design with the end of highlighting all stakeholders' perspectives in the process of curriculum development, course and syllabus design, and evaluation of the effectiveness and efficiency of the implementation of the needs-based course (Chostelidou, 2010).

Needs analysis (NA) refers to the process of collecting, analyzing, and assessing various sources of information in order to determine the special needs of ESP learners (Gea-Valor, ReyRocha, & Moreno, 2014; Huhta, Vogt, Johnson, & Tulkki, 2013). Central to the development of ESP courses (Serafini, Lake, & Long, 2015). Needs analysis according to Flowerdew, (2013) is the initial stage in an ESP course development which is carried out to determine the content and methodology of an intended course.

Moreover, Hutchinson and Waters (1987) pointed out that needs refer to those which the learner must comply with in order to learn and in doing so they will associate these needs with their responsibilities.

Need analysis, according to (Huang, 2019) focuses mainly on students' needs for learning which will subsequently be transformed into learning objectives as outlined in the teaching syllabus to pave the way for subsequent phases. The creation of an ESP syllabus typically results from a thorough investigation of the needs of the learners with respect to their intended contexts. (ibid).

In brief, although the views of some researchers of NA are still debatable as to who should identify and determine the needs yet they all regard needs as a goal-oriented process resulting in a successful course program.

A study on needs analysis was conducted by Chia, Johnson, and Olive (1998) who investigated medical college students' perceptions and some teaching members in order to identify the English language needs of medical students in terms of the importance of English language use and skills for their study and for their future work career in Taiwan. The findings of the study showed that English was perceived as an important need for their academic and future career as medical students who viewed the listening skill as the important skill. Most relevant research studies carried out in the area of NA supported the importance of conducting needs analysis, for example, Mazdayasna and Tahirian (2008) who conducted a needs analysis study to analyze the language learning needs of Iranian medical sciences students at the faculty of nursing and midwifery in Iran. The results of the study revealed that that ESP courses were not as effective as should and thought to be and that they did not satisfy the learners needs. The study concluded that most of the ESP course programs in Iran were established without determining and assessing the learners needs.

Another study by Kaewpet (2009) in Thailand to analyze the communication needs of Civil engineering students that consisted of 25 stakeholders including employers, civil engineers, lecturers, ESP instructors and civil engineering graduates of technical English courses revealed that four communication tasks must be included in the course program for civil engineering students.

Similarly, a study in Taiwan by Liu, Chang, Yang, and Sun (2011) to explore foreign language college students' needs in English for General Purposes and English for Specific purposes and English for Academic Purposes with reference to the students perceptions of three types of needs—necessities, wants, and lacks. A questionnaire was given to 972 college students in six universities. The results showed that the students had different views of necessities, wants, and lacks in in EGP and ESP/EAP courses. The findings also found some differences between the students perceptions of needs and their actual course program, and as a result one can argue that needs analysis is a complex, multiple, and controversial concept.

Likewise, a study by Aliakbari and Boghayeri (2014) to investigate the needs and perceptions of architecture students and graduates and also to evaluate effectiveness of the ESP course program they took. The participants of this study were 120 architecture students and graduates. The results revealed that the students dissatisfaction with the teaching materials, English topics, length of the lessons was noticeable despite the fact that they passed their ESP course but it did not meet nor fulfil their needs.

A recent study by Septiana et al. (2020) which carried out a Need Analysis of the syllabus on the computer science revealed that the target needs among students were speaking and writing skills. The finding of their study also demonstrated that students needed learning styles that focus more on practice than theory. The learning process also needs to be integrated with technology to make classroom activities more interesting. Another more recent study by Ibrahim, (2020) which conducted a Need Analysis showed that the students' needed the most fundamental abilities, namely, speaking and listening skills.

In summary, literature on needs supports the view that target situation analysis is an important component of determining the learners' needs effectively in designing an ESP course in order to come up with a successful and proficient graduate in his future target career.

### 2.2.1. Target needs and learning needs.

Both researchers Hutchinson and Waters (1987) suggested two types of needs, namely target needs and learning needs. In their view, target needs refer to learner's necessities, lacks and wants. In other words, that is what the learner needs to do in the target situation. learning needs, on the other hand, are concerned with learners' motivation to study the target language, their future career, their interests, and their aptitude, that is what the learner needs to do in order to learn.

### 2.2.2. Target needs.

Target needs according to, Hutchinson and Walters (1987) refer to term the learners' necessities, lacks and wants. The term Necessities refer to the needs that are determined by the target situation. In other words, what the learners have to know in order to operate and function successfully in the target situation. For instance, aviation learners, should be capable of reading skills in scientific and technical reports, announcements, user manuals and books. They should also be capable of writing technical reports, emails, formal letters. Aviation learners should be capable of mastering oral skills such as making telephone communications with pilots and air traffic controllers and speaking accurately and fluently in real life emergency situations, giving short talks, advice and suggestions and using general English language skills for everyday communication. Tomlinson (2011) pointed out that materials particularly in ESP teaching, should include authentic materials for students to be familiar with real language use based on their field.

Hutchinson and Waters (1987) stressed that target needs allow learners to identify and determine their own perceptions of their needs. In other words, they refer to the learners' wants or the learners' idea of what they want and need to master the target language. According to Suprayogi & Pranoto, (2020), the selection of goals or objectives, materials, information, and teaching methods are also based on the needs of the target learners. The fact that learners might be fully aware of their necessities and lacks in the target situation but their views and perceptions do not match with that of the teachers. As a result, ESP practitioners must determine what learners expectations are towards an ESP course in which a learning situation analysis is necessary to conduct. This process helps to determine how the learners learn the language, what teaching resources are available for them and what teaching techniques and styles are suit them best since identifying the necessities alone is not enough as the needs of particular groups of learners are important in successful ESP course.

### 2.2.3. Learning needs

Hutchinson and Waters (1987) argue that it is unacceptable to design an ESP course only based on the target objectives. In other words, an ESP course cannot be planned and designed on the basis of (lacks) and the destination (necessities). Therefore, learners' needs, potential and constraints of the route that is the learning situation should be taken into account too. In other words, learning needs help course designers understand how the learners will progress from the starting point, i.e. lacks, to the target destination i.e. necessities. For instance, language learners could be highly motivated in the course subjects because they like the subject teacher but they might lose the interest to participate in classroom activities when they are given long and boring texts.

Therefore, whole process of needs analysis should provide the ESP practitioners with insights to identify the learners' learning needs based on their existing knowledge and skills and the learning situation and learners' motivation. This process of collecting information about needs is the most important source of information which serves as an underlying underpinning for designing an ESP course that satisfies the

needs of a group of language learners.

Hence, the study aimed to identify the student's needs in learning aviation materials to enhance syllabus development in order to investigate the learners; perceptions about the syllabus that supports the student's needs both in general English and English for aviation. As Jumiati (2018) states that "a thorough analysis of the target situation, discourse, and students' needs, as well as the course development that directly results from it, are necessary for teaching English for specific purposes even though there are many similarities with general English teaching".

### 3. Methodology

#### 3.1 Data collection method

The data were collected by the researcher at the end of the course and were counted quantitatively according to the responses of participants. The percentage of the answers was presented in the table for the descriptive statistics to find out what the current and target needs of ATC students are. The data collected through the questionnaire included information on students' English learning experiences, students' opinions on the importance of English language use in their future workplace, students' self-assessment of difficulties in learning English, i.e. weaknesses and lacks difficulties in mastering particular language skills, the way and extent of improving the skills, finally, suggestions for topics which, according to the students' opinions, should be included in the ATC syllabus, as well as students' self-evaluation of learning and teaching styles.

This research study is quantitative in nature as Creswell, 2003 argues that quantitative research is characterized as the precise examination of marvels by gathering quantifiable information and performing measurable, scientific or computational systems. To the best of the researcher's knowledge this needs analysis questionnaire was developed as there was no other survey in the previous literature with a similar focus.

#### 3.2. Data analysis

Based on the research questions and objectives of this study as to investigate the needs of the air-traffic control students, a questionnaire was constructed. The purpose of the questionnaire was to find out the necessities in learning English, such as the language skills and topics needed. Meanwhile, the aim of the questionnaire was to find out the lacks and wants aspects. In analysing the important language skills and topics needed, the Likert Scale would be used with the several categories ranging from three to four. The data related to the students' needs would be analyzed by calculating the percentage of students' responses with the number of the participants in the questionnaire. Therefore, only the highest percentage would be considered to represent the students' actual condition. The gaps (lacks) would be analyzed by comparing which topics were mastered by the students with the topics needed in the target situation.

The questionnaire instrument began by eliciting some information from students by asking them to identify the number of learning experience they had. Next, students were asked to indicate how important it is to learn English for their career as an ATCs.

Respondents were also asked to indicate in what situation they expect to use English for their future career as an ATCs. Respondents were asked to indicate the most difficult skill to develop their English and to indicate how difficult to perform the certain activities and tasks on a 4-point Likert scale ranging from (1 to 4).

Moreover, students were asked to rate their perceived importance to improve English language skills and their views to include certain topics in their aviation education program (English ATC course).

Finally, respondents were asked to indicate their views on the learning & teaching styles as the most effective for them in their English classes.

#### 3.3. Theoretical framework of the questionnaire

For the purpose of the study, an attempt was made to design a questionnaire on the basis of the theoretical framework proposed by Hutchinson and Waters (1987) who proposed a target situation analysis framework that consists primarily of the following questions:

- Why are the learners taking the course?
- How do the learners learn?
- What resources are available?
- Who are the learners?
- Where will the ESP course take place?

Thus, the instrument was developed and used as a tool to obtain some

data on the needs of students at the TCCAM. Some of the questions were modified and adjusted to reveal target information based on the goals of the study. More questions were added to obtain more comprehensive data. The questionnaire designed for the students included question items which were developed to gain information on their current and target needs.

The students were asked to mark their answer choices to the questions using a Likert rating scale. In order to obtain the reliability of the designed questionnaire, the questionnaire was given to two ATC content teachers in order to check the content, format and relevance of the items. Before collecting the data, the questionnaire was then pretested on some students.

As a result, some ambiguities and irrelevances were modified accordingly and the reliability of the questionnaire was confirmed.

#### 3.4. Construction of the questionnaire

The questionnaire included information about the students' learning experience and was dedicated to question items to investigate students' opinions about the importance of English and the skills for their future career. The questionnaire also included some items to find out the degree of the difficulty and skills improvement during the classes they have attended. The questionnaire was to identify the students' needs in English that they had at the time of the study. The questionnaire was to assess their opinions about ATC students and was to check their satisfaction towards different aspects of the classes they have attended already. Some question items about the students' opinions towards the learning styles and syllabus contents were also included in this questionnaire.

Moreover, the questionnaire consisted of 9 questions and each question consisted of some items. The questionnaire was intended to investigate the student's needs. The first question was dedicated to investigate students' language learning experience. The second question was assigned to evaluate students' opinions about the importance of the English language for their aviation future career. The third question was to find out the target situations where the ATC students are expected to use English for their future career. The fourth question was to assess students' opinions about the degree of difficulty for skills improvement during the classes they have attended. The fifth question of the questionnaire was to measure the degree of difficulty for students to perform some tasks. The sixth question was to find out the degree of willingness for the students to improve the language skills. The seventh question was to evaluate the students' views to include some topics in their ATC English course program. The eighth question was to identify the students' perceptions of the most effective ways of learning in their English class. The ninth question was to evaluate the students' opinions about the (length of the input) time length given by their teachers to study English language skills.

**Table 1: Student Self-Reported English Learning Duration and Percentage Distribution**

1. How long have you been learning English?		
	N	%
A -3 years,	0	0
B. 3-6 years,	2	6.6%
C. 6-10 years	21	70%
D. more than 10 years	7	23.3%

**Table 2: Assessment of English Language Relevance to Career Success in Air Traffic Control**

2. How important is it for you to learn English for your career as an ATC?		
	N	%
A, Not important at all	0	0%
B. Less important than other subjects	0	0%
C. Very important	12	40%
D. Extremely important	18	60%

**Table 3: Student Perceptions of English as a Key Skill for Air Traffic Control Career Development**

3. In what situation do you expect to use English for your future career as an ATC?		
Communicating face to face and in voice-only (radiotelephony) with foreign language-speaking passengers, dispatchers, pilots & air traffic controllers	N <b>28</b>	% 93.3%
• Participating in conferences and presentations.	<b>15</b>	50%
• Reading announcements	<b>22</b>	73.3%
• Writing technical documents/reports/manuals.	<b>19</b>	63.3%
• Giving presentations, instructions	18	60%
• Speaking accurately and fluently in real life emergency situations	<b>23</b>	76.6%

**Table 4: Most Challenging English Language Skills for ATC Students to Master**

4. What is the most difficult skill for you to develop your English?		
Listening	N	%
Reading	25	83.3 %
Speaking	17	56.6 %
Writing	26	86.6%
Grammar	23	76.6.%
Vocabulary	21	70.%
Pronunciation	22	73.3%
Listening	26	86.6%

**Table 5: ATC Students' Self-Assessment of Task Difficulty in English Language Use**

5. How difficult is it for you to perform the following activities or tasks listed?				
	Extremely difficult	Very difficult	Slightly difficult	Not difficult at all
Writing technical reports, formal emails & letters	73,3%	26,6%	0%	0%
Giving instructions, advice & suggestions in English	63,3%	23.3%	13.3 %	0%
Reporting and describing incidents/accidents	66,6%	23.3%	10%	0%
Understanding telephone communication messages	<b>76.6%</b>	20. %	20 %	0%
Understanding the user's manual	<b>76.6%</b>	20. %	20%	0 %
Making announcements	73.3%	20%	6%	0%
Reading to get the main idea from a text	56.6%	36.6%	6.6%	0%
Using a wide range of vocabulary when speaking	73.3%	23.3%	1.3 %	0%
Using a variety of grammatical structures when writing	46.6%	36.6%	16.6%	0%

**Table 6: Self-Reported Motivation for Developing English****Language Skills in ATC Students**

6. How much would you like to improve the following skills:			
	A lot	A little	Do not know
Listening	83.3%	16.6%	0%
Reading	53.3%	36.6%	10%
Speaking	80%	20%	0%
Writing	70%	30%	0%
Grammar	45,6%	40%	13,3%
Vocabulary	83,6%	13,3%	0%
Pronunciation	80 %	20 %	0%

**Table 7: Importance Ratings of Specific Topics in ATC English Courses**

7. It is essential to include the following topics in your English ATC course				
	A: strongly disagree	B: disagree	C: agree	D: strongly agree
	A N	B N	C N	D N + %
• Technical Report writing	0	0	6	(N24 ) 80 %
• Making telephone communications	0	0	8	(N 22) 76.6 %
• General English	14	3	1	(N 12) 40%
• Writing formal letters and emails	0	0	10	(N 20) 66.6%
• Air-traffic incidents and accidents,	0	2	10	(N 18) 60%
• Flight safety precautions	1	0	12	(N 17) 56,6 %
• Communication with pilots and passengers	0	1	6	(23) 76.6%
• Aviation phonetics & pronunciation ,	0	0	8	(22) 76.6%

**Table 8: Preferred English Language Learning Methods Among ATC Students**

8. Which way of learning is most effective for you in your English class? Use the following scale in your evaluation:				
	A - very effective	B - quite effective	C - not effective	D - do not like it
	Very effective	Quite effective	Not effective	Do not like it
Working with other students in pairs and small groups.	63.3%	16.6%	3.3%	16.6%
Working alone	23.3	6.6	13,3	56.6%
Integration of theory and training (practical work)	66.6	20	13.3	0
Using IT videos, tapes & films in classroom	70	16.6	13,3	0
Learning English from textbooks without any listening materials	6.6	16.6	63,3	13.3
A teacher who uses Arabic translation in learning English	50	23.3	26.6	0
A teacher who uses only English for learning without Arabic translation	40	30	13.3	16.6
I like taking regular tests, homework & feedback corrections.	83.3	13.3	0	3.3
A teacher who gives reading self-developed learning materials of his own	26.6	16.6	53.3	6.6
A teacher who gives a	86.6	13.3	0	0

core book of English aviation				
A teacher who knows English and is majoring in aviation	66.6	26.6	6.6	0
Class discussion	70	20	0	10
Independent work	40	30	0	30

**Table 9: ATC Student Feedback on Time Given for English Skill Development**

**9. Does your teacher give you enough time to study the following during the ATC course?**

A: little B: not enough, C: sufficient , D: none

	A	B	C	D
Listening	20	0	0	80
Reading	6.6	16.6	76.6	0
Speaking	63.3	26.6	10	0
Writing	53.3	33.3	13.3	0
Grammar	0	23.3	76.6	0
Vocabulary	10	63.3	26.6	0
Pronunciation	23.3	0	0	76.6

Note: N= number of students. % = percentage of responses

#### 4. Results & Discussion

Table 1 shows the summary statistics about the students' learning experience. According to the students' responses to the first question regarding their English learning experience, the data revealed that the majority of students (70%) (n=21) indicated that they have been learning English for almost 10 years. One would expect that student's language proficiency would be higher than B1 or B2 due to their compulsory education in preparatory and secondary school education. According to this percentage, it can be inferred that almost all of the participants had an experience of learning English for 10 years or so, whereas very few students around 6.6% (n=2) stated that they had received English education for 1-3 years. Based on this low percentage, it can be interpreted that almost 2 students did not seem to have studied English a lot because they were graduates from other junior institutes and that they only studied English during their study at the college where this study was conducted. On the whole, the results of the study revealed that none of the participants was deprived from English language education since it was part of their compulsory education.

##### 4.1. The English necessities for the Air-traffic control students.

With reference to the importance of English learning for the air traffic control students for their future career as ATCs, the data in the table indicated that almost around (60%) (n=18) of the students regarded English as 'extremely important' whereas the rest of the students (40%) (n=12) regarded it as 'very important' to be mastered for their future career as ATCs. Therefore, it can be interpreted from the results obtained that students' English language needs for their professional development were of paramount importance and not only a need to pass a test or course but it would contribute to their professional development after graduation. On the whole, it can be suggested that teachers and instructors should consider the students' target needs towards the importance of English language learning for their future career as ATC controllers, and not as a requirement to pass an ESP course.

With regard to the 3<sup>rd</sup> question concerning the students' target situation needs where they are expected to use English for their future career, the analysis of data revealed that the target situations in which the students would be expected use English in their future career such as the ability to communicate, that is, the ability to speak and understand the language used in radiotelephony communication. Proficient speakers must be able communicate effectively in voice-only (telephone/radiotelephone) and in face-to-face situations. In voice situations means communication between pilots and air traffic controllers and face-to-face interaction is the conversational situation that both pilots and air traffic controllers may encounter. The results

of the study revealed that almost all of the students (93.3 %) (N=28) are expected to communicate face to face and in voice-only (radiotelephony) with pilots and air traffic controllers, foreign language-speaking passengers as well as dispatchers in their future career. The study also showed that (76.6%) of the students had expected to speak accurately and fluently in real life emergency situations and that (73.3%) of the students are expected to write technical documents/reports/manuals.

On the whole, it can be interpreted here from findings of this study that the students' expectations should be taken into consideration when designing an ESP course since ATC students in this study seemed to be aware of the target situation needs and their future profession requirements.

##### 4.2. The English lacks for the Air-traffic control students.

As for the 4<sup>th</sup> question which was targeted to assess students opinions about the degree of difficulty for skills improvement during the classes they have attended, according to the data in the table above, the results indicated that the substantial majority of the students (86.6%) (n=26) stated that speaking and pronunciation were the most difficult skills for them to develop and master, whereas almost (83.3%) (n=25) of the students regarded listening as the most difficult skill for them to develop, and that more than two-thirds of the students (76.6%) (n=23) chose writing as the most difficult skill to develop. However, the results pertaining to students' lacks in the target situation indicated that speaking, pronunciation and listening skills, were the most difficult skills to be developed and mastered. Therefore, it can be inferred that students were aware of the critical role these skills play in preventing communication breakdowns that could result in aircraft accidents and consequently these skills should be developed and mastered. It can be concluded that it was difficult for students to understand air traffic control conversations because of the radiotelephony and as a result they needed more exercise from real life situations extracted from specific listening materials. Furthermore, the findings demonstrated that almost the rest of students indicated that the reading skill was not as difficult as other skills to develop probably because they had more exposure to reading materials at the college than other skills in class. Regarding the 5<sup>th</sup> question which was intended to assess the level of difficulty for students to perform certain tasks and activities, these activities involve students to perform certain tasks such as writing technical reports, formal emails and letters or giving instructions, advice & making suggestions in English or reporting and describing incidents & accidents or making announcements or understanding the user's manual. From the data obtained, the results indicated the majority of the students (76.6%) (n=23) regarded the tasks & activities of understanding the user's manual and understanding telephone communication messages as extremely difficult for them whereas (73.3%) (22) of the students were found to have experienced difficult tasks in writing technical reports, formal emails & letters and making announcements as well as using a wide range of vocabulary when speaking. Therefore, it can be inferred from the results that these difficulties could be attributed to the learners' lack to study technical terminology in ATC language course to help them handle air traffic control communications or reading and understanding the user's manuals.

From this perspective, it can be argued that these tasks & activities are important for the ATC students because they play important roles to avoid communication breakdowns resulting in aircraft accidents. Technical terminology is an essential component to be included when designing a course for air traffic control course as safety is the first priority in aviation is not limited to having a clear and intelligible English accent rather air traffic controllers and aviators also need to use standard phraseology effectively as there is a strong relationship between the issue of safety in and learning aviation terminology .

On the whole, it can be inferred that the reason why students considered these tasks as the most difficult to perform could be attributed to the fact that students did not study technical terminology quite seriously at the college.

In conclusion, the findings of this study suggest that professionals in the area of ESP aviation should consider including phraseology when designing a course for ATCs.

##### 4.3. The English wants for the Air-traffic control students.

With reference to the 6<sup>th</sup> question, which was targeted to assess the degree of students' willingness to improve the language skills, the

findings of the study indicated that almost most of the students were willing to improve their language skills a lot since the majority of respondents would need to use English in their future career and workplace. The data revealed that around (83%) of the students had a strong interest to improve their listening and vocabulary skills a lot more than other skills. This might explain that the learning materials students had in their course did not contain enough audio/ video input nor they had enough exposure to study technical phraseology. Similarly, speaking and pronunciation skills had the same percentage which were identified by almost two thirds (80%) of the students as the most preferable skills from them to improve. It can be assumed that the students' strong willingness to improve these listening and speaking skills could be attributed to their awareness of the importance of these skills for communication. It can be inferred from the responses that students did not have enough language input probably due to their teachers' teaching methods or the teaching materials used. With respect to the 7<sup>th</sup> question which was aimed to assess the students' views to include some topics in their ATC English course program, the results demonstrated that the majority of the students (80%) strongly agreed to include topics such as technical report writing and aviation terminology in their ATC English course program whereas more than half of the students(76%) strongly agreed to the idea of including topics such as making telephone communications, communication with pilots and passengers in their ATC English course program. It can be inferred that these three important topics were the most important topics that were needed by most students in order to function effectively in the target situation and therefore these topics must be included in their syllabus.

As for the 8<sup>th</sup> question which was intended to assess the students' perceptions about the most effective ways of learning in their English class, the data of the study revealed that almost more than half of the students (63.3%) preferred working with other students in pairs and small groups as the most effective way of learning whereas almost half of them (56.6%) did not prefer to work alone. It can be interpreted the reason why students preferred working with other students in pairs and small groups as to create more discussion and interactions to help them develop their interactive skills.

The findings also showed that almost (66.6%) of the students preferred the integration of theory and training (practical work), and that they preferred a teacher who knew English and was specialist in aviation. The results also indicated that more than two thirds of the students (86.6%) preferred a teacher who gives a core book of English aviation whereas almost half of them (53.3%) did not prefer a teacher who gives reading self-developed learning materials of his own choice. The data also showed that approximately two thirds of the students (83.3%) regarded taking regular tests, homework and feedback corrections as a very effective way of learning, whereas almost more than half of them (63.3%) indicated that learning English from solely textbooks, without listening materials, was not affective.

Regarding the 9<sup>th</sup> question which was aimed to assess the students' opinions about the length of the input (time length given by their teachers to study English language skills), the results showed that around two thirds of the students (80%) indicated that they did not receive any listening and pronunciation lessons throughout the whole course and that they had almost no speaking lessons during the teaching lessons. Based on this finding, it can be inferred that teachers might only use their self-developed materials rather than using a core book to teach English for aviation students during the course. It can also be interpreted that students did not have the chance to listen to the recording materials nor had any chance to study speaking or pronunciation skills.

Moreover, based on the results of this study, it can be concluded here that almost all students preferred recent learning approaches and teaching materials that include the use of tapes/CDs/Video films, labs and simulations in the classroom in order to discover for themselves the answers to the problems autonomously.

## 5. CONCLUSION

This study investigated several issues concerning students' needs, (wants, necessities & lacks). First, from the students' perspectives, the most critical skills that needed to be developed by ATCs are listening and speaking regardless of the reading and writing demands of most tasks. Second, students chose several important topics to be included in their syllabus depending on the importance of each language skill.

The findings also revealed that students had indicated their preferences for certain topics based on their importance in real-life target situations. Third, regarding wants, it was up to the students to decide what to learn although not all of the wants were seen priorities or useful to help enhance the teaching and learning process. Finally, with respect to students' lacks, the results indicated that most of the students seemed to have some lacks regarding the learning styles and lacked many important topics as well as the length of the teaching input that should be considered when designing an ESP course. Therefore, these lacks should be exploited as they might provide fruitful information about what should be included and what should be taken into account to pave the way for students to reach their target situation goals.

## 5.1 Pedagogical Implications

The findings of this research study diagnosed some issues which were worth investigating and provided some necessary suggestions which should be implemented when designing an ESP course, more specifically aviation English course. Therefore, the first thing should be done to develop an ESP course plan that can suit the needs of Aviation English learners is to conduct a needs analysis. In brief, the needs that came up in this research study were as follows:

- ATC Students should be exposed to teaching materials pertaining to aviation, more specifically, English for Air-traffic control purposes, to help them develop their Technical linguistic competence.
- ATC Students should be given teaching materials from authentic life situations such as real communications between air traffic controllers and pilots, as well as audio materials to develop their speaking & listening skills.
- More time should be assigned for listening, aviation phonetics and speaking in classroom to help students develop their communication skills.
- Aviation phraseology should be an integral part of Aviation English course plans to develop students technical vocabulary.
- When teaching an ESP course, students' views about learning Aviation English should not be neglected and should be exploited for their professional development.
- ESP teachers should allocate less class time to lectures and give more class time to activities such as role-play ,simulations, describing a picture, Giving instructions, advice & suggestions , and reporting problems.

## 6. Limitations of the study

This research has a number of limitations that could lead to more future research opportunities to get more insights into what is really important for academics and ATC students alike. One of the main limitations is the small size samples of the study. Secondly, this study was quantitative in nature and there was no interview or group discussions of students nor including academic educators in this study, which could have supported the findings of this study. Thirdly, although the findings of this study were generally found to be consistent with that of prior studies, therefore, they cannot be generalized. Therefore, these limitations should be considered for future research studies.

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