

## CHALLENGES OF TEACHING AVIATION VOCABULARY AND RADIO PHRASEOLOGY AT HIGH SCHOOL LEVEL

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### ABSTRACT

This paper aims a) to analyze the challenges in teaching aviation vocabulary and radio phraseology at high school level in English language instructors' perspective and b) to present some recommendations that can help to reduce encountered problems if taken into consideration in the design and implementation of the related syllabus and course program. This study is based on a qualitative research model in which focus group interview is used as the data collection procedure. It is a fact that the challenges encountered in teaching technical vocabulary initiate from the very nature of teaching English for specific purposes to the learners of English as a foreign language. According to the results of this study, the problems occurring in learning environment are classified and analyzed in two main categories: The first group of problems arises from the students' language competence and motivation. The second originates from instructors who are mostly experienced, therefore more motivated in English language teaching but not in aviation as a technical field.

**Key Words:** Teaching vocabulary, Aviation Terminology, Radio Phraseology.

### INTRODUCTION

#### Teaching English for Specific Purposes

Learning a foreign language has been considered to be a vital requirement for the formation of today's knowledge society. Communication in foreign languages is also stated as one of the eight key competences, determined and regarded as a must that all citizens should have for a successful life in a knowledge society (EU com:2004). Since English is accepted to be the international language as an inevitable key to international currencies of science, technology and commerce, English language teaching (ELT) has been at great importance in all educational systems in our unified world of relentless progress. For the same reason, English for specific purposes (ESP) has been a rapidly developing branch of English as a foreign language (EFL) and has become a major force in English language teaching and related researches.

In a metaphor, formed to identify the place and the role of English for specific purposes (ESP) in English language teaching, ELT is likened to "an old and historic city inhabited by the gentle noblemen of English language, literature and grammar" whereas ESP is a newly founded city by the noble adventurers who can no longer be satisfied in their homeland of ELT but go and seek for new fertile lands beyond the mountains, inhabited by "illiterate and savage tribes of Scientists, Businessmen, and Engineers" (Hutchinson & Waters, 1987). As narrated in this metaphor, the emergence of ESP in the late 1960s was not a planned and coherent movement but rather a phenomenon that grew from the natural need for learning English of the businessmen who wanted to sale their products, the mechanics who wanted to read their instruction manuals, written in English, the doctors and the engineers who wanted to keep up with the recent technological advances in their fields, designed in English, the pilots who wanted to comprehend radiotelephony communications in English

and the learners of all these fields who are supposed to follow their textbooks, only available in English. The idea can be clearly conveyed from the emergence of ESP that the needs and the purposes of the learners in learning English forms the very basis of ESP that determines what to be taught and how it is taught. In other words, "Tell me what you need English for, I'll tell you the English you need" is the guiding principle of ESP that determines the content material and the methodology via which English is taught (Hutchinson & Waters, 1987). ESP is accepted to have "legitimized English teaching" so it is in a way a more systematized and purposeful form of English teaching (Brumfit, 1986). ESP also refers to research and instruction that focuses on specific communicative needs and practices of particular professional and occupational groups (Hyland, 2007)).

### **The Significance of Teaching Technical Vocabulary in ESP**

Learning language is not just about learning its grammar but rather about learning vocabulary and using it properly for communicative purposes. "Without grammar very little can be conveyed, without vocabulary nothing can be conveyed." (Wilkins, 1972). For this reason, English language teachers should give vocabulary a high profile in the syllabus and in classroom activities so that students can understand its importance (O'Del, 1997). According to lexical approach, in which the words have a primary role, "to know a word means how to use it in the real life to be able to communicate" (Lewis, 1993). This means that proper vocabulary learning demands the productive use of vocabulary. The acquisition of vocabulary is also the most critical component of successful language learning in ESP. "A certain degree of stress involved in productive practice of vocabulary" refers to the idea that vocabulary practice should be challenging but not too much stressful and frustrating for the learners (Gairns & Redman, 1986). Technical vocabulary is the specific terms of a field that are taught to the learners that can use them confidently without misunderstanding. These terms are also called as "jargon" and are essential for operation in a particular field. Field-specific vocabulary is important to maintain communication in that field and it is obviously important to teach the technical vocabulary for specific fields (Benson & Greaves, 1981). Each field has a set of technical words restricted with people familiar with that field and there are also nontechnical words, usable in many fields (Gregory, 1967).

Teaching technical vocabulary is essential for learners' comprehension of the content since they won't be able to understand and learn from the textbook chapter or reading selection well enough if the important technical terms have not been explained beforehand (Cheek & Cheek, 1983; Thomas & Robinson, 1982). But it has been always difficult to determine the most important words and phrases needed to build a proper vocabulary for conducting effective conversations in a particular profession or an occupational field (McCarten, 2007). "It is a virtual truism that understanding the terminology of a field is a major part of understanding the field itself." (Memory, 1990). If the objective vocabulary isn't presented beforehand, the content can become increasingly difficult for the students to comprehend. No matter how long time teachers use for vocabulary instruction, teaching the meaning and the usage of the technical vocabulary contributes a lot to the learning of the content area.

### **The Significance of Teaching and Learning Aviation Vocabulary and Radio Phraseology**

"The language of international air-traffic control could be regarded as special, in the sense that the repertoire required by the controller is strictly limited and can be accurately determined situationally, as might be the linguistic needs of a dining-room waiter or air hostess" (Mackay & Mountford, 1978, p. 4-5). Thus, aviation English can be a subdivision of ESP, while Radiotelephony English (RTFE) which is the core of Aviation English may be considered a kind of special language for occupational purposes (EOP) or a restricted language.

Aviation technology, like all the other branches of science does not belong to any particular nation or culture but refers to a universal concept. Likewise, the radiotelephony language is based on English language, as a common lingua franca, a part from cultural and lingual variations. When the worldwide spread of modern science and the relentless advances in aviation technologies are taken into consideration, the essence of teaching aviation English vocabulary as a collection of technological developments in aviation industry can be clearly understood. The global aspect of aviation technology resulting in varied cultural and lingual practices in aeronautical industry poses great difficulties for students of aeronautical English, including different lexical forms, semantic features and pronounceability of technical English words. In other words, this multiplicity and variety of aviation communities affects aviation vocabulary learning with regard to the meaning, form, spelling

and pronunciation of technical terms. This problematic nature of aviation vocabulary learning makes the teaching of it more important as a subdivision of ESP.

Before exploring the significance and the challenges of teaching aviation English in Aviation as a broad technical field, it would be useful to clarify some technical terms: To begin with, aviation English can be defined as “a comprehensive but specialized subset of English related broadly to aviation, including the plain language used for radiotelephony communications when other phraseologies do not suffice” (Wang, 2007). Radio telephony conversation can be defined as the communication between pilots and air traffic controllers that takes place through a radio medium with one air traffic controller in the control tower talking to many pilots on the same frequency. The term phraseology refers to a group of standardized words and phrases commonly agreed on to use in radiotelephony communication. Phraseology comprehensively covers all routine situations, and can be considered as an example of a language for specific purposes (LSP). Plain language is the language used in radiotelephony communication between pilots and controllers when phraseology does not suffice, especially in abnormal conversations and emergency situations (Kim & Elder, 2009). When a routine use of phraseology does not suffice, plain English is favorably used by pilots and controllers in order to maintain a correctly conveyed and clearly understood radiotelephony conversation (Howard, 2008). In parallel to this, according to the International Civil Aviation Organization (ICAO) manual, plain language should be specific, explicit, and direct (ICAO, 2004). English is the default language for such communication in international aviation. For aviation personnel, proficiency in English language is required (ICAO, 2003). English language, plain or phraseological, is generally the language used by aviation personnel consisted of native and nonnative speakers, as well. Aviation English is not only a restricted specific purpose code but also a lingua franca (Jenkins, 2007). The use of English as a lingua franca has a number of characteristics that “distinguish it from the native-speaker standard including a disregard for grammatical niceties” (Seidlhofer, 2004). Successful English as a lingua franca communication is, “overtly consensus-oriented, cooperative and mutually supportive” (2004, p. 218). However, there are natural limitations of non-native English users in the use of English in radiotelephony communication. In addition, their limited control of English may pose some crucial threats for aviation safety (Atsushi, 2004). Hence the recent International Civil Aviation Organization policy emphasizes the importance of bringing non-native users’ English to an appropriate standard.

Since students’ knowledge of words influences their achievement in all technical areas as words are significant for communicating the content in general, aviation English vocabulary can be accepted to be a major difficulty that impedes students’ progress in English for Specific Academic Purposes (ESAP). According to a survey made in Civil Aviation University of China, 83% students admit that vocabulary is an important factor in learning the English language. The research (see appendix I) indicates that vocabulary is the number one obstacle in reading comprehension, followed by grammar and background knowledge; greatest barrier in listening comprehension, followed by speaking speed and accent, greatest impediment to oral and written expression, followed by organizing viewpoint and grammar (Wang, 2011).

Appendix I. Survey Result (Frustrations in Acquiring Language Skills, Wang, 2011)

Skills/Items	Vocabulary	Grammar/Structure	Accent/Speed	Culture
Listening %	50	12	30	8
Speaking %	44	18	18	20
Reading %	79	8	6	7
Writing %	48	32	8	12

The students’ development of communicative skills and familiarization with the aviation concepts and terminology are very important in preventing and resolving misunderstandings. For this reason, aviation English instructors should realize the significance of aviation vocabulary teaching and have it influenced over their

teaching activities. With this increased awareness among aviation English instructors of the impact of teaching and learning aviation vocabulary on safety, trainees will develop a “more professional, safety-oriented approach to their tasks, as non-native speakers, of English language development and maintenance, and to their daily work-related uses of language”(Mell). According to Fiona A Robertson, the ex-president of ICAO, the main question here is how much experience the teachers of English have with the world of aviation. Generally speaking, the teachers’ field is the language not aviation technically. So it is very natural for teachers with little aviation experience to have a fear of not being credible in particular especially when they are with trainees new to the job. An aviation English instructor cannot be expected to expertise in all aviation vocabulary. His job is only “to apply English lexicology into aeronautical vocabulary sorting and teaching in the context of aeronautical English and to explain certain terminologies or phraseologies in a specifically chosen context that he has comprehended” (Wang, 2011).

According to another study, exploring the nature of miscommunication in radiotelephony conversation between a native speaking pilot and nonnative speaking air traffic controller at air traffic control center of the main international airport in Korea, the Native speaker is observed to have little difficulty in meeting the ICAO requirement because he is already proficient in English. When it comes to the Korean controller, although English language proficiency of him is never specifically mentioned, there is a clear reference to his non-native pronunciation, concluded to be the reason for a number of misunderstandings in their radiotelephony conversation. It can be concluded from the findings of this study that the teaching of pronunciation to non-native English speaking aviation personnel is vitally important as the lack or incompetence in pronunciation can cause some misunderstandings in radiotelephony conversations which can even jeopardize the flight safety (Kim & Elder, 2009). The ex-president of ICAEA (International Civil Aviation English Association) Fiona A Robertson also emphasized the importance of pronunciation practice as an inseparable part of every aviation lesson because most aviation English practice is oral. She pointed out that pronunciation and oral comprehension are very closely related as someone who pronounces badly will have problems understanding. For her, the correct accentuation of longer words is essential for comprehensibility of aviation texts, and for understanding spoken English in radiotelephony conversations. There are also core features of pronunciation, which need to “be mastered for mutual intelligibility between English users from different L1 backgrounds”. There should be an emphasis on teaching pronunciation which should also be taken into consideration in syllabus design in the training of non-native English speaking flight-personnel (Jenkins, 2005). Aviation phonetics should be the core component of the curriculum in the training of air traffic controllers (ATC) and pilots because having learned international phonetics systematically, learners will be able to be deal with the articulation and pronunciation difficulties, caused by phonetic contrast between their native language and English (Wang, 2007).

In the study of Kim and Elder, exploring the nature of miscommunication in radiotelephony conversation at Korean air traffic control center (2009), despite his proficiency in English, the native speaking pilot is also blamed to lead some misunderstandings just because of his overuse of plain English instead of common flight phraseology. Therefore, the training of all pilots and controllers, whether native or non-native, should absolutely involve training in the use of commonly shared flight phraseology and of current aviation phraseology repertoire in order to maintain a successful and efficient radiotelephony communication with speakers from diverse language backgrounds (Kim & Elder, 2009). In addition to teaching common flight terminology, teaching of some conversational strategies, including simplification of speech, proper paraphrasing of some problematic utterances causing problems of comprehension has a great importance for the training of both native and non native English speaking aviation personnel. In parallel to that idea, Sullivan and Girginer, writing about the Turkish context of aviation training, have claimed that teachers of aviation English should be “engaged in collecting and analyzing discourse samples so that they better understand the communicative setting and develop enhanced course materials” (2002). “..the more words are analyzed either phonologically, semantically or comprehensively, the more they are enriched by associations rendered by learners, the longer they will be stored in memory” (Wang, 2011). According to Wang, with a proper usage of teaching materials, classroom activities and correct teaching methods, different groups of students can enjoy learning aviation vocabulary. In addition to it, encouraging students to make their own lexical associations

when learning new vocabulary can “to some extent, can transform the lexicology learning task from uninspired drudgery into newfound delight” (Hulstijn, 2001).

## **MATERIAL AND METHOD**

### **The Aim of the Study**

This study aims to determine the challenges of teaching aviation vocabulary and radio phraseology at high school level in the point of view of the instructors of English who teaches Aviation English. As the state high school is a technical school specialized on the field, and Aviation English is an inseparable part of the curriculum, the scope of the study is well chosen. Focus group interview is the proper and direct technique to collect and analyze the related data in the viewpoint of the instructors who are the experts of the subject.

### **Limitations of the Study**

The state school where this study is carried out is a special technical school having private rules and regulations about data privacy. Working as an instructor of English at this state high school, the researcher and the facilitator of the study has to obey these limitations on data privacy. That’s why the name of the school and of the instructors are not stated openly but coded as T1, T2, and T3. This can be considered as the mere limitation of the study.

### **Data Collection**

This study is based on a qualitative research technique: focus group discussion. The meeting room was quiet, physically comfortable, and free from any outsider distraction not to avoid the respondents from focusing on the discussion. All of the instructors were willing to participate in the interview. All the participants are instructors of aviation course can be considered as the experts in teaching Aviation English. The first participant, coded as T1 is the course book writer. Two of the instructors, coded as T1 and T2 defined themselves “inexperienced” in teaching aviation vocabulary but had their MAs in Education whereas the other instructor, T3 indicated that he had been giving aviation course for years. All the instructors were males. The researcher was the facilitator of the three participant focus group discussion done in a state high school in Turkey. The facilitator aimed to create a relaxed, informal atmosphere where the participants felt free to express their personal opinions openly and sincerely. In order not to take any sides and direct the discussion objectively, the facilitator did not express any personal comments or make any judgments on the opinions of the participants. All participants were led to participate equally so that one participant should not be allowed to dominate the discussion. The facilitator arranged the open-ended questions from general to specific and presented them in such a way to encourage the participants to express their opinions about the challenges they face in the classroom and the syllabus and course book they use freely. Within the discussion, the participants are also asked about their expectations from the students in aviation lessons and their suggestions about the issue. The sessions were tape recorded and transcribed after the meeting. All the participants checked the texts in turns after the discussion. The irrelevant data gathered from the participants was ignored in this study.

### **Data Analysis**

The focus group interview, recorded on tape was carefully listened and transcribed by the researcher. The names of the participants on the tape recording were omitted and coded as T1, T2, and T3 in the transcript. Then the researcher scanned the transcript to locate the reoccurrences of the key words and concepts. These key concepts were grouped and interpreted in some main categories from which the following findings were generated and the central themes of discussion were derived.

## **FINDINGS AND DISCUSSION**

With the analysis of the data collected through the focus group interview, the findings can be categorized and discussed under the subtitles, stated as follows.

### **Instructors' Lack of Experience in Teaching Aviation English**

Two of the instructors participated in the research presented their not being experienced in teaching aviation course as the most significant challenge, they encounter since it takes a lot of time to get prepared for the course to become familiar with the terms and phrases related to the subject matter of each lesson. "Although I am experienced enough and self-confident in English courses, I lack confidence and motivation in Aviation lessons", "I don't think I am entirely acquainted with the content" and "Teaching English is my field, but Aviation is technically distant." are commonly expressed thoughts. Furthermore, all the instructors except for the one who is the course book writer, stated that they do not feel themselves safe and confident teaching with a newly written course book no matter how much they studied beforehand. They noted "I study on radio phraseology more than the students do, but it cannot still make me feel safe with a new book."

With the increasing importance of aviation vocabulary teaching and the application of the ICAO standards and requirements, the demand for aviation English teachers and the need for qualified language teachers in the specialism of aviation will increase. In addition to this, the vital impact of aviation vocabulary teaching even in flight safety loads aviation English instructors with a huge responsibility of teaching their students the right group of vocabulary with the most appropriate methods. We cannot expect a teacher new to aviation to know every single term in aviation field or immediately start producing teaching materials but present the group of phrases in a particular subject matter (Wang, 2011). It takes time for a teacher of English to get experienced, to build self confidence, and to feel completely safe in teaching aviation English especially to more challenging students who would be the experts in aviation in near future.

### **Students' Unconcern in Aviation English Lessons**

All the instructors/participants are of the idea that the students may sometimes not be enough concerned about the content and the requirements of aviation lesson as it is not a separate course but merely a one hour part of the six hour English course. Because of the same reason, as the course does not include a separate exam, the students' anxiety level is not enough to feel responsibly oriented and motivated to the lessons. The participants stated that the students "are not always concerned about the lesson" because they know their performance "won't affect their English lesson grades very much."

A certain amount of stress can be good for vocabulary learning. In other words anxiety, to a certain extent can create a more responsible and motivated attitude towards vocabulary learning (Gairns & Redman, 1986). On the contrary, lack of adequate anxiety causes some motivational problems such as unconcern and irresponsibility of students in aviation English lessons.

### **Students' Incompetence in English Language**

All the instructors/participants agreed that some of the students especially in 11th graders are not competent enough in English language to comprehend the newly introduced technical vocabulary easily and thoroughly. In their opinion, that can sometimes spoil the entire learning atmosphere and prevent the rest of the students' from being concentrated on the subject matter and participating in classroom activity. One of the participants said "For me, technical vocabulary learning requires a minimum intermediate level of English" and they agreed, sometimes it is likely that "there are some false students in every class" who are probable to "slow down the others' comprehension."

It is a well known fact that language incompetence of nonnative pilots and air traffic controllers can cause vital misunderstandings in radiotelephony conversations in real flight experiences. Language incompetence that directly affects the comprehensibility of radio conversations can even result in fatal flight accidents. Nonnative students' not having proper language background not only makes the comprehensibility of aviation texts harder but also leads to some further problems in teaching technical vocabulary in target language such as disorientation of the other students who are competent enough to learn more. It can also cause teachers consume their limited time to make up for the gap in between different English competence levels of their students in the class.

### **Students' Incompetence in Pronunciation Technical Words**

All the instructors/participants stated that most of their students in both grades are not good at pronouncing some aviation English terms "especially the long and problematic ones". They particularly said that their students generally "have a hard time producing -th sound" which does not exist in their mother tongue. They share the idea that the problem arises from the phonetic differences in between Turkish and English languages. They admitted that they cannot give enough time and effort for proper pronunciation practice during their vocabulary teaching in aviation English lessons.

Teaching and learning pronunciation plays a crucial role in aviation English since the pronunciation incompetence of nonnative speaking personnel can cause some misunderstandings in radiotelephony conversations and even endanger the flight safety (Kim & Elder, 2009). Competence in pronunciation is an important part of oral comprehension in radiotelephony conversations and of the comprehensibility of aviation texts. It is natural that nonnative speaking students have some problems in accurate pronunciation of some aviation terms especially because of the phonetic differences and difficulties in English. That's why nonnative students need more time and effort for pronunciation practice. The only way to deal with the phonetic contrast in between the aviation students' native language and aviation English is to spare adequate time and effort for teaching pronunciation (Wang, 2007).

### **Lack of Supplementary Material**

All the instructors/participants shared the opinion that the course needs and should be supplemented with extra four skill based material in order to reinforce student's vocabulary intake and comprehension. They think, although there is a huge number of "attainable authentic videos on aviation", they face a great difficulty in finding "graded supplementary material, that includes target vocabulary and objected radio phraseology" and "is appropriate for students' level of English" as well.

There are lots of available live traffic recordings on internet which are very interesting and demanding for aviation students. However, as they are authentic so cannot always address the same range of target vocabulary that the teacher needs to teach, they cannot always be instructive enough. As it is not always possible to make simulations in a recording studio, the instructors of aviation should comprehend the authentic traffic recordings and videos beforehand to turn them into more comprehensible input for their students by preparing related comprehension questions and vocabulary study for the lessons.

### **Lack of Application Field**

All the instructors/participants think that the aviation course, given in the class lacks a proper application field. They agreed that the students "cannot practice the target vocabulary properly." and they all proposed the idea that the students should be given the chance of practicing the Aviation terms and phrases "in a real flight experience or at least in a simulation."

Vocabulary plays an important role in learning the subject matter. Learning and knowing a new word does not only and simply mean to understand its meaning but also means to be able to use it properly for communicational aims in real life situations (Lewis, 1993). For this reason, meaningful vocabulary learning requires a productive and communicative use of vocabulary when needed. Practicing the target vocabulary is an essential part of teaching and learning technical vocabulary. For this reason, every aviation English course should provide a large amount of speaking practice of the technical vocabulary for which role-playing as a simulation of a live traffic dialogue can be useful. This kind of elaborate role-playing situations in language classroom can be very closely related to the original work situation but cannot replace a real flight experience or a flight simulator practice on a real flight base.

## **CONCLUSION AND RECOMMENDATIONS**

With the analysis of the data collected through the focus group interview, it can be clearly concluded that the challenges of teaching aviation vocabulary can be classified in three main categories: the problems arising from the students' language competence and motivation, the problems originating from instructors' not being

experienced enough in teaching aviation, and the problems coming from aviation course program design which is lack of graded supplementary material and a separate and proper testing system.

In accordance with this grouping, the following recommendations below can be given to minimize the challenges encountered in teaching aviation vocabulary.

- It can be clearly concluded from the findings that the instructors need to be more competent in teaching technical vocabulary and radio phraseology. The question should be how they can improve their knowledge and competence in aviation vocabulary which is technically a distant field to ELT. The following recommendations are given to guide instructors in improving their competence in technical vocabulary and boosting their self esteem in teaching aviation vocabulary:
  - Instructors can undertake a two or three day visit to a flight base, including a short technical course program of aviation phraseology that will give them the chance of getting familiar with the aviation terms and contact with the pilots who are the real experts on the field. It will not only improve their technical knowledge and competence but also supplement their confidence and motivation in teaching technical vocabulary, as well.
  - Pilots can be organized to give some sample aviation lessons. It will not only provide a good example for the instructors in teaching aviation vocabulary but also reinforce both the instructors' and the learners' motivation in aviation lessons.
  - The instructors can work in coordination with the pilots while designing the aviation course syllabus and planning the course program. In this way the content can be selected more professionally that it can be more applying to students' personal interests and needs as candidate pilots.
- Some of the 11th grade students' English language competence should be fostered to improve their comprehension in aviation vocabulary. It may be managed in two ways, indicated as follows:
  - The instructors may plan additional English lessons to support this disadvantaged group of students with basic grammar and vocabulary practices.
  - The instructors may give introductory aviation lessons to 10th graders in order to provide a proper technical background for them, make them acquainted with the aviation content in an earlier stage, and foster their competence in picking up aviation vocabulary.
- Visits to flight bases once or twice in a term can be very useful to create students' awareness, interest and motivation in aviation. It will also help students practice the objective aviation vocabulary on the field with the real actors, the pilots, in simulated radio conversations or real flight experiences.
- The instructors, in collaboration with pilots, should work on new supplementary materials through which the students revise aviation vocabulary by four skill practices. They can also search for and adopt new audio visual materials and aviation videos from different course books into their program. This will also make the aviation lessons more attractive and the course book content more comprehensible for the students.
- Aviation lessons can be designed as a separate course in order to make students more concerned about the lesson and its requirements. If it is designed as a course, separate from the English lessons, it will have a separate exam that can create enough amount of anxiety among students. In that way, not only the students' self interest, willingness and motivation towards aviation English lesson but also their success in aviation English exam would increase, as well.



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