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TEACHING ENGLISH AS A FOREIGN LANGUAGE

TITLE

Enhancement of the English for Specific Purposes Methodology applied at an Aviation Military School in Salinas

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CERTIFICATION

We certify that this research Project was presented by Víctor Alfonso Almeida Pacheco and Marisol Edith Gutiérrez Santos, as a partial fulfillment of the requirement for obtaining the Master's Degree in Teaching English as a Foreign Language

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STATEMENT OF RESPONSIBILITY

We, Victor Alfonso Almeida Pacheco
And Marisol Edith Gutiérrez Santos

HEREBY DECLARE THAT:

The Senior Project: **Enhancement of the English for Specific Purposes Methodology applied at an Aviation Military School in Salinas** to obtaining the Master´s Degree in Teaching English as a Foreign Language has been developed based on thorough investigation, respecting the intellectual property right of third parties, regarding citations within the corresponding pages whose sources are included in the bibliography. Consequently, this work is our full responsibility. Under this statement, we are responsible for the content, truthfulness and scientific scope of the aforementioned paper.

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We, Victor Alfonso Almeida Pacheco
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Authorize the Catholic University of Santiago de Guayaquil to publish The Senior Project: Analysis of the English for Specific Purposes methodology applied at an Aviation Military School in Salinas, in the institution's library. The contents, ideas and criteria in this paper are of my full responsibility and authorship.

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Marisol Edith Gutiérrez Santos

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Authors

Dedication

This work is dedicated to the pillars of my life: my beloved husband José, who has enormously helped me during this process, his constant support and motivation made things easier for me. My three lovely children, Ariana, Pepo and Martín, they are the light of life and my greatest inspiration. I would also like to dedicate this research to all the members of my family and colleagues who encouraged me to pursue my dreams.

Marisol Edith Gutiérrez Santos

I dedicate this thesis to my family, who has truly supported me throughout this thesis. My beloved wife, Arelys who has always encouraged me to do my best and reach the goals I have set in my personal and professional life. To my little loved treasure, Victor Gustavo. My son whom I loved so much.

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Abstract

The purpose of this research is to analyze the Methodology of an “English for Specific Purposes” (ESP) Aviation course used for flight operations and Radiotelephony operations at Escuela Superior Militar de Aviación “Cosme Renella Barbatto” (ESMA) in Salinas, Ecuador. The analysis of this research was both quantitative and qualitative; hence, the design for this research is a mixed method approach. The instruments used to obtain the collected data were a mock Aviation English test, an interview for teachers, and a survey for the students. For this study, fifteen pilot cadets of first year were considered as well as the aviation English module instructor. Teachers and students’ perceptions towards the Aviation English module were monitored, observed and analyzed.

The results of this research showed that some aspects regarding the Methodology of the Aviation English module taught at ESMA must be improved since not all the cadets were familiarized with ICAO’s Language Proficiency Requirements manual or The ICAO Standardized Phraseology manual.

This investigation proposes a Blended Learning design as a contribution to improve the methodology of aviation English course ta ESMA.

Key Words: ESP, Aviation English, ICAO, Blended Learning, Radiotelephony Operations, Standardized Phraseology

Introduction

In Aviation, English is considered the “lingua franca”, i.e. everybody who is emerged in this field needs to use it as the only means of communication. It is of paramount importance to mention though, that the kind of English used for international aviation is not general, but a precise type called English for Specific Purposes (Estival, Farris & Molesworth, 2016).

In one of its policies, the International Civil Aviation Organization (ICAO), which is a specialized agency, involved in aviation safety, legal regulations, and operating procedures that contribute to international civil aviation, establishes that pilots and air traffic controllers must demonstrate proficiency in English (ICAO, 2010).

In the first chapter, learning theories related to ESP courses are detailed. The approaches and their principles have been included as part of the theoretical framework: The Communicative Language Teaching (CLT) and Content-Based Instruction (CBI).

In the second chapter, all the guidelines provided by the ICAO in terms of to the implementation of Aviation English training programs are explained as well as the importance of the ICAO’s manual of Language Proficiency Requirements needed to obtain a national and international flight license.

The cadets, who are trained to become military pilots at Escuela Superior Militar de Aviación “Cosme Renella Barbatto” (ESMA), are expected to pass one module of Aviation English to fly an aircraft. Nonetheless, the grades obtained in the Aviation English Mock Test applied for data collection on this investigation revealed that the level is lower than the required by the ICAO, which is the “Operational Level 4” equivalent to B1 in Common European Framework of Reference for Languages (CEFR). In the third chapter, the results of the survey and the interview confirmed that the Aviation English course at ESMA does not fulfil the needs of future pilots to be.

The purpose of this research is to determine the level of Aviation English proficiency for Aviation needed according to international standards to reduce communication errors in flight operations as well as to analyze the course materials used in the module of Aviation English in order to characterize the methodology applied during the ESP Aviation course at ESMA.

Additionally, this research seeks to determine how the current ESP methodology affects the achievement on Aviation students. It is important to mention that this study had some limitations. For instance, the number of participants is reduced since it is the only course available for the sake of the research. Since this course took place inside the hangars, which are restricted areas that can be accessed only by military personnel, class observations and documents like grade reports of previous courses could not be included in the process.

In the last chapter, a Blended Learning design is presented as a proposal to improve the methodology applied in the module of Aviation English at ESMA. An online platform is also included in the design; for that reason, suggested lesson plans have been elaborated to determine the roles that the teacher and the students could have in the teaching-learning process.

Ultimately, the final purpose of this research is to contribute to the main goal of Aviation English training program, which is to reach the ICAO's Operational Level at ESMA so that future pilots can be more competitive and recognized internationally. In this way, new frontiers and job opportunities will benefit not only the educational community, but the nation as well.

Statement of the problem

The present research was conducted in Salinas, at "Escuela Superior Militar de Aviación Cosme Renella Barbatto" (ESMA), which is one of the bases of the Ecuadorian Air Force. The cadets who are trained to become military pilots must pass one module of Aviation

English in order to reach the minimum level required by the International Civil Aviation Organization (ICAO) to fly an aircraft. Nonetheless, the grades obtained in the last course revealed that the cadets did not develop the necessary skills to pass the ICAO 4 mock examination taken before the flight course. According to the instructors, these results may be caused by different factors, including traditional methodology applied during the English for Specific Purposes (ESP) course.

One problem is Military Flight instructors being in charge of teaching Aviation English to the cadets because of the lack of teachers specialized in the beforehand mentioned field. All the documentation such as class plans, or the materials used in the class are in Spanish. Therefore, traditional methodology based on memorization is the main characteristic in the development of this module. There is not an official textbook; the materials used are a manual of the aircraft assigned by the school and a digital file that contains terms or expressions with their meanings.

There is no practice in classes because the instructors not only have to teach, but also, they have different responsibilities inside the school. Regarding to the cadets, they know they have to study if they want to pass the module since it is a requisite before flying an aircraft. There are some useful books and dictionaries available at ESMA's library. Unfortunately, they are not updated. The time given for the module is thirty-two hours, and according to some of the cadets, it is not enough to learn all the technical vocabulary as well as expressions needed in Aviation English. There are some quizzes that instructors prepare themselves, and most of them are completion tasks or matching activities. The final test of the module is a multiple-choice exam, which is also the final grade.

The contents of the module are based on the manuals of the aircrafts and do not intend to develop the skills needed for communication in a foreign language nor the parameters

included in the standards established by the International Civil Aviation Organization (ICAO).

This organization recognizes six levels of English proficiency:

- Pre-elementary, (1)
- Elementary, (2)
- Pre-operational, (3)
- Operational, (4)
- Extended (5) and
- Expert (6)

ICAO Operational Level 4 is a requirement for all pilots around the world. Consequently, this ESP course the university has been working with does not provide the future pilots with the necessary knowledge to be officially certified.

Justification

Aviation English is essential in the communication between the cabin crewmembers and the air traffic controllers. Nevertheless, the methodology applied in the ESP module of Aviation at ESMA does not allow the cadets to develop the necessary skills for communication. This research is going to characterize the materials and the methods applied in the process of acquiring the language that is used in the Aviation field.

This research will be significant due to the fact that the language used in the Aviation field has especial features in its terminology and plays an important role for safety issues while flying. At ESMA, Aviation English is taught without an organized guide that includes the contents needed for military operations as well as the topics recommended by the ICAO to avoid miscommunication problems, which can be the cause of fatal incidents. Considering this, the cadets of ESMA must be able to understand phrases and terms used for: taking off or landing, and while the performance of flight navigation.

This investigation will be useful for the flight instructors at ESMA since they will be capable of analyzing the impact of the current teaching methodology in the module of English for Specific Purposes (ESP). It will also provide the institution with updated procedures to improve the level of English in the Aviation field following the parameters established by organizations for communication between pilots and air traffic controllers worldwide. The results of this investigation will allow the flight instructors to improve the process of teaching the language features needed in Aviation English.

The innovation in the methodology of the ESP module will encourage the cadets of ESMA to learn Aviation English because they will feel more comfortable using updated materials based on the standard phraseology and radiotelephonic communication needed to direct, inform, question, request, and respond to air traffic controllers. The main purpose of this research is to analyze the incidence of the current methodology applied in the module of Aviation English at ESMA and propose an alternative in order to improve the process of this ESP module.

Research Question

- How does the methodology of an English for Specific Purposes Aviation course influence the acquisition of an appropriate lexicon for flight operations at Escuela Superior Militar de Aviación “Cosme Renella Barbatto” (ESMA) in Salinas?

Objectives

General Objective

- To enhance the methodology of an English for Specific Purposes Aviation course used for flight operations at Escuela Superior Militar de Aviación “Cosme Renella Barbatto” (ESMA) in Salinas.

Specific Objectives

- To determine the level of English proficiency for Aviation needed according to international standards to reduce communication errors in flight operations.

- To compare the course materials used with the level of proficiency needed in Aviation English for Specific Purposes (ESP) course.
- To characterize the methodology applied during the ESP Aviation course at ESMA.
- To determine how the current ESP methodology affects the achievement on Aviation students.

Chapter I

Theoretical Framework

Teaching English as a Foreign Language

According to Richards and Rodgers (1986), the basis of contemporary language teaching was developed throughout the twentieth century. Different principles were developed in various areas related to linguistics in order to design the most suitable teaching methods and approaches. The main goal in all the studies related to methodological guidelines for teaching English as a second or foreign language is to provide learners with the necessary knowledge to communicate in different contexts in which the use of English is required.

Communicative Language Teaching Approach (CLT)

Richards and Rogers (1986) explain that the Communicative Language Teaching Approach (CLT) was initiated in England around the sixties. It was considered a new alternative to traditional language teaching methods. The influence of the research done by the Council of Europe regarding language acquisition as well as the findings presented by scholars like Wilkins, Widdowson, Candlin, Christopher Brumfit, Keith Johnson, were the basis of the theoretical framework of CLT.

Widdowson (as cited in Richards, 2006) describes CLT as an approach that focuses on motivating learners to use the target language for communicative acts, for instance, how to express what they like and dislike, how to offer and accept apologies, how to introduce someone, and give explanations. The objective of CLT according to Widdowson is to help learners to build their communicative competencies and allow students to induce or discover grammar rules.

Richards (2006) defines CLT as a process in which learners use the target language on tasks that allow interaction among all the participants of a class. To establish real

communication is the focus of this approach since it enables learners test their linguistic abilities as well as improve aspects like fluency without concentrating on errors. The learner is encouraged to build up communicative competences, the different language skills that are linked in the course tasks, and grammar rules are discovered by the student during the process.

Canale and Swain (1980) state that the goal of any language course should be to prepare learners who can communicate in the real world. For this reason, the implementation of tasks that use authentic material is fundamental to develop the four language skills. In other words, the process of language acquisition in CLT takes place using real-life material that enables learners to interact naturally applying the lexicon provided during instruction.

Features of CLT

Nunan (1991) describes five features of CLT:

- Learning must be focused on interactions using the target language, such as dialogues, role-plays
- Use of authentic material in the learning environment, such as real-life situations
- Learners must concentrate on tasks that require the application of the language in a natural form, such as task completion, gap fillings, etc.
- The use of learner's personal experiences must contribute to language learning.
- Link classroom language learning with activities which take place outside of the classroom, such as application of terms for specific purposes.

Communicative Competence

According to Canale and Swain (1980), CLT focuses on improving learners' communicative competence, which is an essential part in the process of acquiring knowledge and developing skills for communication. The four components of communicative competences stated by these authors are:

- Rules for vocabulary selection as the Grammatical competence.
- The correctness of word selection as the Sociolinguistic competence.
- Consistency and coherence as the discourse competence.
- Accuracy in the use of communication strategies as the strategic competence.

Bachman (1990) considers that communicative competences are part of an organizational system that includes grammatical and textual competence, pragmatic competence, sociolinguistic and illocutionary competence. This appreciation was complemented by Kiato and Kiato (1996) who state that the main idea of a communicative competence is to develop the ability to use language properly in real situations.

Richards (2006) states that communicative competence includes the following characteristics of language acquisition:

- The use of language in different purposes and functions
- Selecting language features according to the context as well as the participants.
- Be able to produce and comprehend a variety of texts.
- Establish communication in spite of being limited in the language.

Classroom techniques in CLT

According to Richards (2006), when applying CLT in the classroom techniques and strategies play an important role. Activities that require accurate repetition and memorization are not part of the tasks that build communicative competencies in the context of the CLT approach. Instructors must implement assignments that allow learners to negotiate meaning and to interact meaningfully. Among the activities included for communicative classes are role-plays, interviews, discussions, information gap activities, language games, language learning simulations, problem solving tasks, quizzes, and surveys.

Littlewood (1981) highlights two main functions of CLT tasks: communicational activities and social interaction activities. Functional communication activities have the goal

of developing some language skills and functions involved in communication. On the other hand, social interaction activities are used to maintain conversations and discuss about trending topics that are important in the learning context.

The use of authentic materials

In order to develop communicative competences, Nunan (2004) states that educators must carefully select authentic materials that provide learners with real-life contexts. The characteristic of this type of material is that it has not been specifically designed for language teaching and the purpose of using them inside of the classroom is for familiarizing learners with the language needed in real life.

Among the materials, that Nunan (2004) considers as authentic are included: audio, audiovisual and printed materials. Examples of these include:

- Audiovisual resources: news, sitcoms, TV commercials, music videos, films.
- Audio resources: announcements that are commonly heard in public places like railway stations, airports or supermarkets.
- Visual: newspapers, magazines, photographs, paintings, drawings, stamps, currencies, restaurant menus, street signs, product labels, tourist information brochures, catalogues, telephone books, greeting cards, letters, memos, circulars.

Educators must assign authentic materials based on the learner's needs or interests, sociocultural context as well as language learning goals.

Roles of Teachers and Students in CLT

Larsen-Freeman (1986) claims that the role of teacher is to develop interaction in the classroom by establishing situations that promote communication. The educator must monitor the class in order to advice and answer students' questions. Instructors should help learners to notice their errors and these must be clarified by modeling accurate answers.

Richards (2006) highlights that the teachers' role includes the ability of being flexible to support the learning process of students. Additionally, educators must be aware of learners' needs regarding language learning. It is necessary that teachers motivate students to complete tasks by using the acquired knowledge, using suitable teaching methods in which the instructor does different things like advising, analyzing and processing the information as well as using the material as a common participant. (Richards & Lockhart, 1994).

Content Based Instruction

Richard and Rogers (2001) define Content Based Instruction (CBI) as an approach related to second language teaching in which learning is organized around the specific knowledge that students will acquire. The content usually refers to the subject matter that learners must use to apply linguistic features that enable effective communication. Content-based instruction is "the teaching of language through exposure to content that is interesting and relevant to learners" (Brinton, 2003, p. 201). This means that CBI is considered a suitable methodology for ESP courses in which learners' needs are the main focus of the course design.

Snow (2001) outlines the concept of content as "the use of subject matter for second/foreign language teaching purposes" (p. 303). Subject matter is referred as topics or themes related to a specific field needed in adult EFL setting. In the case of schools, the application of CBI may be for subjects that involve certain type of terminology like social studies or science.

Principles and characteristics of CBI

Richard and Rogers (2001) explicate that the principles of CBI are based on the principles of Communicative Language Teaching (CLT). The active participation of students is the main goal in both approaches. There are two principles listed for CBI by Richard and Rogers:

- Students are likely to learn a second language in a more successfully way when they use it for relevant communicational purposes.
- CBI takes into consideration learners' needs in the process of second language acquisition.

Brinton (2003) adds more principles to the ones presented by Richards and Rodgers (2001). These principles involve educators as well as institutions that intend to implement CBI as part of their teaching methodology.

In the following paragraphs the mentioned principles will be described and briefly explained.

Base instructional decisions on content rather than language criteria: Most of the books for second language acquisition are not elaborated by language teachers, which is why trainers have to adapt the material to be used in the classroom, especially when working with CBI. This approach enables educators to select and sequence the content as well as to determine the pedagogical teaching strategies.

Integrate skills. CBI promotes the integration of all the language skills during the whole process of instruction. One task of a CBI course may require developing reading and writing skills simultaneously. Another task may focus on listening and speaking skills, which is something that happens in the real-life context.

Involve students actively in all phases of the learning process. CBI is a learner-centered approach. In the learning process, students do not depend on the teachers to acquire knowledge since learners play an *active* role during CBI classes.

Choose content for its relevance to students' lives, interests, and/or academic goals. Content is completely linked to the students' interests as well as instructional situations.

Use of authentic texts and tasks. Authenticity is another important feature of CBI. The use of real-life material makes learning meaningful in the specific academic field that is been studied.

CBI educational models

According to Brinton, Snow and Wesche (1989), CBI provides teachers with three different models that could be used as part of the methodology in second/foreign language classes. The models are Theme-based model, Sheltered model, and Adjunct model. These models can be applied by taking into consideration factors as the population, needs, context, and interests of the learners as well as teachers.

Brinton, Snow and Wesche (1989) suggest that "there are at least three distinct models of content-based instruction that have been developed in the second language instructional setting; these models tend to be found in elementary, secondary, postsecondary, and university settings".

The theme-based model (TB) is part of the most common model applied in CBI classrooms because its implementation is easy to achieve. The principal goal is to develop learners' communicative proficiency in the context of the subject matter. The syllabus is organized in themes or topics and the materials used usually integrate all skills (Richards & Rodgers, 2001).

According to Richards and Rogers (2001), the characteristics of TB models are:

- A language teacher, not a specialist on the subject matter, is the one in charge of teaching content.
- The syllabus in TB courses is organized the most relevant topics of a particular discipline.
- Contents or topics are selected based on the student's academic and cognitive interests and needs
- The coherence among the selected contents or topics must be a priority to provide learners with a logical language and content learning.
- TB courses must include specific language objectives, which are usually more important than the content learning objectives.

- TB promotes the integration of the four language skills.

The Adjunct model (AL) aims at linking a specially designed language course with a regular academic course. AL courses are imparted to students who are simultaneously registered in ordinary courses, but due to the lack of necessary linguistic competences, it needs additional assistance. The content base in both courses is the same; they only vary in the focus of instruction: while the content teacher concentrates on academic concepts, the language educator highlights language skills using the academic content as a background for the language learning process (Richards & Rodgers, 2001).

According to Dueñas (2002), the main features of the AL model are:

- AL are supporting courses and are aimed at developing learning strategies to understand real academic content.
- The language component of the course is connected to the students' academic needs.
- The fact that students are aware of the need they have regarding specific linguistic issues increase their motivation.
- These programs are more common offered in second language contexts rather than in foreign language ones.

The Sheltered model (SSM) was developed in Canada at the University of Ottawa. It was the replacement of the Traditional Methodology applied at a university foreign language class; the sheltered content-based course is taught within the context of second language acquisition (Brinton, Snow & Wesche, 1989).

The Characteristics of SSM model listed by Richards and Rogers (2001) are:

- It eases the development of language abilities for students to reach the course goals;
- The general objective of SSM courses is content learning rather than language learning.
- SSM courses are aimed at developing second language situations rather than of foreign language instruction.

- In sheltered subject-matter instruction, the instructor is a specialist on the subject matter.

Aviation English

The definition provided by the International Civil Aviation Organization (2004) considers that aviation language has its own characteristics and functions, and most of them are the product of the intention all the users have, as well as the context. Speech functions, themes, interactive diagrams or conditions are basically determined according to the context in which the language will be used. The beforehand mentioned context is somewhat extensive and covers the expressions that engineers use, as well as, the vocabulary needed by the flight crew. Also, it covers the terminology technicians normally work with, which includes special language pilots, air traffic controllers and/ or aircraft constructors normally use in their work. (ICAO, 2004).

Aviation English is the language that contains specialized vocabulary for pilots, air traffic control, and other types of aviation personnel. It is centered on a specific pronunciation, vocabulary, grammatical structure, and discourse styles that are used in aviation-related contexts (Alderson, 2008). Aviation English courses have their own methodology and use real life resources that allow learners to practice linguistic expressions in order to create scenarios that are closely similar to the ones aviation personnel will have to face in flight operations.

Aviation English is defined by Cushing (1994) as a wide-ranging but specific subsection of English related largely to flight operations, in which the “plain” language used for radiotelephony communications when phraseologies do not fulfil the need of the message to be found. This type of English not only includes lexicon for controllers and pilots, but also Aviation English can comprise the use of language in other aspects before and after flying. or instance, the language needed by pilots for briefings, flight deck communication, announcements, as well as the dialects used by the maintenance department, flight attendants,

dispatchers, managers and officials within the aviation industry, or even the English language studied by students in aeronautical and/or aviation universities.

Aviation English is a worldwide language used by specialists in the field to maintain routine and non-routine aeronautical communications (Ragan, 1997). This language is officially recognized by the ICAO for in-pilots, cabin crewmembers and air traffic controllers who can be native or non-native speakers of the target language. Kukovec (2001) states that such communication is challenging due to the fact that there are high risks of miscommunication errors in the aviation setting. For this reason, the structures are based mostly on the communicative intention rather than grammatical rules. Aviation English is required to be brief but, more importantly, it has to be clear and the stress must be focused on the language training in all its possible phases.

ICAO (2004) states that English is the mother tongue (L1) or national language in more than sixty-member nations and is a second language (L2) in some other countries that are also part of the organization. Additionally, the fact that English is a lingua franca represents a more productive way of theorizing terminology related to aviation. Mackay & Mountford (1978) declare that the language of international air-traffic control ought to be seen as distinctive. In other words, the repertoire controllers require is harshly limited and can be determined depending on the situation, which makes it quite unique for the field of aviation.

Radiotelephony conversations are interpreted as the communication among pilots and air traffic controllers (ATCOs) takes place, and it occurs by using a radio as a medium amid an air traffic controller with many pilots on the same frequency (Wang A. , 2007). Radiotelephony communications between air traffic controllers and pilots is essential in Aviation English. It embraces (but must not be limited to) the phraseology manual established by the International Civil Aviation Organization (ICAO) as well as “plain language”, which is also known as general English. For this reason, the combination of communicative skills with

aviation concepts and terminology plays an important role in preventing and resolving misunderstandings in flight operations. When pilots and controllers have to resort to plain English, sometimes problems arise in non-routine and emergency situations, since the phraseology lacks effective communication in unpredictable situations like board medical emergencies, problems with the engines, etc. However, when both parties live by the rules already established, problems in communication will rarely occur.

The objective of this type of language is to deal with frequent situations pilots have and ATCOs' daily face; the use of suitable functions of the language to interchange data in order to identify and solve misunderstandings, ask, ratify, or clear up information in a general or work-related context (Mell, 1996).

Phraseology represents a group of standardized words and phrases commonly agreed to use in radiotelephony communication. It comprehensively covers situations that are part of the routine when flying; therefore, a phraseology manual can be considered as an example of language for specific purposes (LSP) (Wang, 2011). On the other hand, plain language is the language used in radiotelephony communication between pilots and controllers once the terminology and expressions detailed in the phraseology manual do not cover the need of the operation, especially in irregular circumstances as well as emergency situations. Additionally, plain English is positively used by pilots and controllers in order to preserve a clear radiotelephony conversation (Kim & Elder, 2009).

According to Mitsutomi and O'Brien (2002), *chunking* is the term associated to define the process of merging words in order to create expressions that have a unique meaning in aviation. The importance of learning how to use *chunking* is linked to the ability of identifying the events in which they are actually needed. Even though these expressions do not follow grammatical rules or lexis, the fact of use them in flight operations represents another way of acquiring the type of language applied in everyday flight operations.

"The practice and application of lexical chunks assist students to write and communicate better and they should be able to differentiate high-frequency and low-frequency vocabulary items. Language fluency and accuracy is mostly accomplished by recalling and bringing together premade chunks of language and it is a common belief by many language users" (Mitsutomi & O'Brien, 2003).

English for Specific Purposes (ESP)

According to Hutchinson and Waters (1987), English for Specific Purposes is considered as an approach rather than a product, due to the fact that it is not a different type of language. However, the decisions regarding the methodology, teaching strategies, as well as the content can vary depending on the results of a needs analysis, which is based on the learners' requirements.

Strevens' definition (1988) aims at describing ESP by distinguishing both, its absolute and variable characteristics. The former explains that (1) the language developed in ESP courses is designed to encounter specified needs of the learner; (2) the language must be focused on the studied field in syntax, lexis, discourse, semantics, and analysis of this discourse; (3) ESP is considered as an approach that is in contrast with General English teaching principles. The latter includes elements such as the skills of the language (these are not necessarily developed in all tasks) and the methodology can differ according to the students' needs. This description also tries to categorize ESP as a methodology in contrast with General English. Subsequently, this definition implies that ESP courses should center on developing language for a particular area based on the specific purposes of communication.

Dudley-Evans and St. John (1998) present a revised definition of ESP, which also takes into consideration absolute and variable qualities of this approach. Absolute characteristics are similar to Strevens' work: (1) ESP is defined to meet specific needs of the learner; (2) the methodology and activities underlie the discipline which is been studied; (3)

ESP courses must be aligned to the language features (grammar, lexis, register), skills, discourse and genres suitable to these activities. The variable characteristics proposed are: (1) ESP courses must be developed for specific fields of study; (2) the methodology used in ESP does not have similar from that used for general English; (3) ESP is a type of course specifically designed for adult learners who have an intermediate or advanced level of English. The difference between this definition and Strevens' is the importance given to fundamental aspects of the language such as skills development in the course. It has also removed the characteristic that "ESP is in contrast with General English" extending the application of ESP to encompass the specific needs of the students who do not necessarily belong to any specific occupation or discipline.

Needs analysis represents the initial stage of an ESP course, which can be considered as the key step in the process of designing a course for learners with a specific need (Hutchison & Waters , 1987). The term "needs analysis" has evolved along the decades, during the 1960s and early 1970s, and it mainly comprised in evaluating the communicational purposes of the learners and strategies of reaching specific teaching objectives. Nowadays, the process of analyzing the needs of learners is a more complex process due to the fact that information to be obtained must be gathered in order to determine who the participants of the course are, what the target situation is, and the environment when studying ESP (Duddley-Evans & St. John, 2009).

According to Dudley-Evans and St. John (2009), eight elements in the concept of needs analysis have been gathered into five broad areas. This includes (1) the target situation analysis and objective needs analysis that consist of the tasks and activities in which English will be used by the learners; (2) the linguistic analysis, discourse analysis and genre analysis, that cover the knowledge of how to use language in the target situations; (3) subjective needs analysis, which refers to the learners wants or desires as well as the factors that may affect the

learning process; (4) the current situation analysis that is the identification of the learners' current skills and language use; (5) means analysis, which covers the information about the environment where the course will take place.

Hutchinson and Waters (1987) state that if the reason why learners need English is identified, then the content of the language can be adequately adapted, and the teaching process will satisfy these needs. Once the necessities have been listed, it is imperative that needs are stated in terms of goals/objectives that can serve as the foundation for developing tests, materials, different types of activities strategies for evaluation (Brown, 1995). Subsequently, needs analysis leads the road in the process of designing ESP courses not only to determine the objectives or content, but also to select the material to be used, and to assess the system as a whole.

As for the assessment, Munby (1978) claims that it must be focused on examining the motives for learning, the place and time in which the target language will be used, others with whom the user will interact, the specific content areas which include the tasks involved, the skills that will be developed during the process (listening, speaking, reading, writing, etc.), in addition to the level of proficiency required. Brown (1995) states that needs must be specified in terms of goals and objectives which will allow the creation of the basis for the implementation of tests, materials, teaching activities and evaluation strategies.

ESP Teaching and Learning Processes

According to Strevens (1988), the methodologies applied for ESP teaching are developed to shape the input, encourage the learners' intention to learn, manage the learning tactics and promote practice and the use of specific language of a specific discipline. This means that the learners' needs play an important role at the moment of acquiring the language in ESP courses. Hence, learning strategies must be chosen carefully to maintain and rise motivation during the process of teaching in order to generate a positive impact so that

learners can achieve the goals of using the language as a tool in certain areas. Additionally, learners' attitudes towards learning and learning strategies are emphasized and considered fundamental in the ESP process.

The role of the ESP teacher is essential at the moment of organizing the syllabus, "course design is often a substantial and important part of the workload" (Hutchison & Waters, 1987, p. 21). Students are the core of the learning process; hence, teachers have to include tasks, which allow the participants to be dynamic contributors in the process. For this reason, it is imperative to analyze the elements required previous to the implementation of an ESP course, so that it includes adequate techniques in the development of the contents which have been selected to fulfill the learners' needs as well as the objectives of the course.

According to Dudley-Evans and St. Johns (1998) "The key stages in ESP are needs analysis, course (and syllabus) design, materials selection (and production), teaching and learning, and evaluation" (p.121). These phases are cyclical and comprise all the elements which must be taken into consideration for the implementation of an ESP course. The identification and analysis of needs (NIA) produce general statements that are translated into objectives of the course. The Syllabus Content is "through the sequencing of materials, whose layout and presentation should form a continuum" (Benyelles, 2009, p. 58). As for the evaluation or assessment, it is based on the tasks that produce what the learners want to learn.

In the guidelines for teaching Aviation English established by the ICAO (2004), it is stated that learning must be centered on speaking, listening, and interactive skills. Although it is classified as English for Specific Purposes (ESP), the process of conveying aviation English does not consist only on making learners to absorb 'subject matter focused' material, but it also suggests the application of the specific vocabulary in real life scenarios (Richards, J. & Rodgers, T., 2001). For some positions only, some skills are needed (e.g. ATCOs need to pay

more attention to speaking and listening). Actually, they ought to manage these two skills perfectly; in fact, reading and writing are not necessary at all.

According to Dusenbury and Bjerke (2013), language oral proficiency plays an important role in safety issues in flight operations. Pilots and ATCOs must possess ability to give, obtain and process information in an accurately professional specific context.

ICAO (2009) establishes the Communicative Approach as the principal methodology for teaching Aviation English, with the purpose of ensuring that technical expressions included in all manuals related to flight operations are practiced based on real life tasks within the context of aviation. The foundation of this approach is that the subject matter to be taught must be developed through the application of communicative strategies based on a range of language resources (Richards, J. & Rodgers, T., 2001). Linguistic features must be practiced in order to produce specialized communication that takes all the parameters established in the field of Aviation English into consideration.

The functions of communication in aviation English are also listed on the document published by the ICAO (2009). These contribute to the teacher in the process of identification of linguistic components, which are useful when deciding on the most appropriate learning strategies teachers should follow. Harmer (2007) describes communication as ‘speaking events’. Therefore, aviation English can be seen as transactional, which refers to the exchange of services basically. In addition, it is seen as interactive, which refers to the communication between the pilot and ATCO. Moreover, they are perceived as both planned and unplanned. The former refers to all regular flight operations, and the latter refers to unexpected situations such as meteorological conditions, mechanical failure.

A wider outlook is proposed by Hedge (2000), who splits the idea of communicative skills into ‘linguistic’, ‘pragmatic’, and ‘strategic competence’. The linguistic competence involves the knowledge of the structures of the language in order to apply them in the

communicative tasks. The pragmatic competence refers to the learners' ability to recognize not only the terminology, but also the application of it in a given context. As for the strategic competence, it is recognized as the aptitude to rewording and negotiate meaning, which is part of the rating scale for evaluating vocabulary at Level 4 (ICAO, 2010).

ICAO (2010) has established the areas of communication into language functions, events & domains and tasks. The objective of this document, in which these areas can be found, is to guarantee that all speakers have adequate language proficiency to deal with non-routine situations. ICAO determined an analytical rating scale and a set of holistic descriptors to detail the level of English required by pilots and ATCOs. The Rating Scale includes speaking and listening skills divided in six criteria: Pronunciation, Structure, Vocabulary, Fluency, Comprehension and Interactions. Additionally, we can find six language levels in which level 4 is considered as the minimum required for personnel licensing. It is safe to say that ICAO Operational Level 4's target is not high degrees of grammar use or native-like pronunciation.

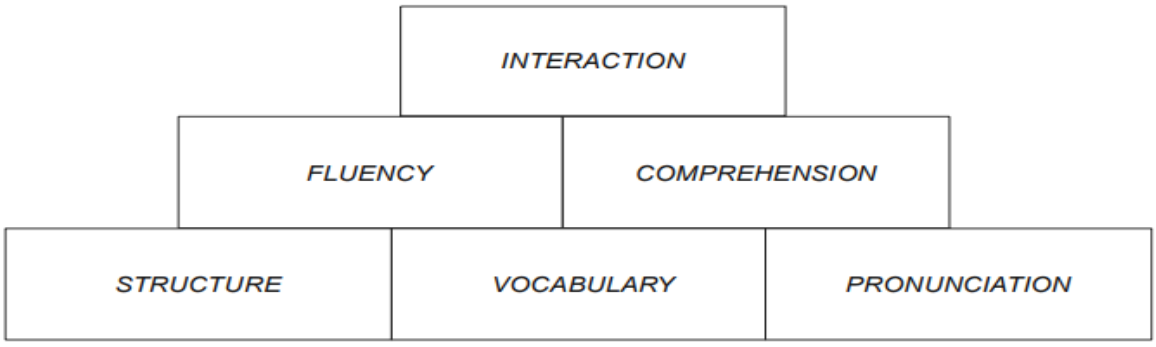

Figure 1. A pyramid structure of language proficiency skills. Taken from "Manual on the Implementation of ICAO Language Proficiency Requirements, Doc 9835" by ICAO, 2004, p. 2-10.

Computer Assisted Language Learning (CALL)

Levy (1997) defines Computer-Assisted Language Learning (CALL) as the application of software in the process of language teaching and learning. The objective of CALL is to implement the use of computers with the purpose of acquiring language. CALL is

the introduction of software, which promotes educational learning; examples of this material are word processing programs, simulators, multimedia video games and internet tools such as e-mails, instant messages or chat rooms.

CALL offers pupils and educators a variety of opportunities to acquire some lexicon as well as to develop the skills in the process of learning a language by using computers as main resource (Warschauer, 1996). According to Chapelle (2001), the constant technological development has been part of the evolving role of electronic devices in language courses, for that reason CALL is divided in three phases. In each of them technology is used for pedagogical issues in a different level. These phases are called: Behavioristic CALL, Communicative CALL and Integrative CALL.

Atkinson and Wilson (1969) state that Behavioristic CALL is a teaching approach that was first analyzed in the 1950s and applied in the 1960s. The three main characteristics of this phase of CALL were:

- Programmed instruction materials based on behaviorism.
- Data processing sophistication
- Time sharing system for CALL purposes

Taylor (1980) describes the role of computers as tools to send instructional materials to learners for its drilling and practicing. Based on the principles of Behaviorism, computers and tutors had the same responsibility that was to assign tasks for repetitive language drills in order to enable learners to memorize vocabulary and grammatical structures.

Programmed Logic for Automatic Teaching Operations (PLATO) was the first computer-assisted instruction system that was originated at the University of Illinois (Warschauer, 1996). According to Dina and Cironei (2013), this system had some advantages for repetitive language drills and practices:

- It provided stimulus to learners;

- Active responses from the teachers and learners;
- Immediate feedback.

Taylor (1980) states that the second phase of CALL is known as Communicative CALL due to the fact that it focused more on using the language than learning grammatical structures. The software developed during the Communicative CALL phase provided learners more tasks related to skill practices rather that repetitive exercises. The main characteristics of this CALL phase are:

- Learning was focused on: discovering, expressing, and developing language.
- Functions of the language were emphasized.
- The objective was to develop communicative competences.
- Grammar was taught implicitly.

Taylor and Perez (1989) describe the role of computers as a part of the motivation learners had to acquire a language. The software created during this phase of CALL involved tasks like: completion of conversations, written tasks, critical thinking questions, spelling games, as well as text reconstruction activities.

The last phase of CALL is known as Integrative CALL, which is a teaching approach based on the inclusion of multimedia resources and online tools that integrate interactive and audiovisual learning environment (Warschauer, 2000). The access to these resources requires the use of a PC, CD-ROMS or Internet.

According to Warschauer (2000), the main features of Integrative CALL are:

- The incorporation of multimedia resources to language learning.
- Friendly-user software such as: ToolBook, Authorware, and Director
- Intrinsic motivation is built while learning
- Interaction among learners through the use of computers
- Learners establish their own learning pace

- Authentic language learning environment is created
- Integration of the four skills
- The main focus during instruction is on content and language skills

Wang (2012) states that Integrative CALL allows the internet to play an important part in the process of language learning since the inclusion of educational online tools provide students with direct communication around the globe. The most common resources use in the context of Integrative CALL are:

- E-mails: These allow learners to receive and send information.
- File Transfer Protocol (FTP): is used for transmitting and downloading files between computers on the Internet.
- Instant Chat: allow learners to have real-time communication.

Blended learning for ESP courses

Anderson (2008) explains that the implementation of technological devices as well as the use of the internet in second language acquisition has produced the need of including new terminology related to this methodology. For this reason, terms such as: Blended Learning (BL), Online Learning, E-learning or Web-based Learning have been part of studies conducted within the context of digital tools for educational purposes during recent years. Graham (2006) states that Blended Learning (BL) is considered to be the result of combining ICT tools with face-to-face instruction, providing learners with up-to-date features of the academic field to be studied.

BL represents a pedagogical approach that allows technology to play an important role in the learning process. Therefore, this method must be seen not as a temporal construct, but rather as a fundamental change in all educational models. Additionally, Garrison and Vaughan (2008) describe the basic principle of BL to be the optimal integration of face-to-face instruction with appropriate online resources to develop oral and written communication. As a

result, the strengths of each type of training are blended into a unique learning experience matching the situational context and intended educational goals.

Hrastinski (2008) explains two types of activities included in blended learning programs, these are synchronous and asynchronous tasks. The former is sent and received in real time. This means that all the members of the course are working on a specific assignment at the same time. As for the latter, students do not require to be logged simultaneously and this material can be accessed by participants anytime and anywhere. Distance education programs prefer asynchronous tasks since learners do not feel time dependent and can solve tasks at their own pace.

A study presented by Bonk, Olson, Wisher and Orvis (2002) was aimed at analyzing the impact of the blended learning approach in the context of a high-level military course of United States Army Armor School in Fort Knox, Kentucky. This work was developed in three phases using asynchronous internet-based learning in the initial stage, synchronous learning in virtual collaborative chat tool in the second part, and face-to-face learning in the last phase. Interviews with students, teachers and advisors allowed the researchers to determine the pros and cons of this approach in ESP courses.

Among the advantages that were mentioned by the participants, there was the fact that synchronous tasks seem to encourage teamwork more than asynchronous activities. Additionally, researchers found that online activities created a more meaningful learning environment due to their authenticity, which led to realistic problem-solving scenarios. On the other hand, there were some learning issues that were caused by two different factors in the three stages of the investigation; these are lack of knowledge of ICT tools during synchronous and asynchronous computer-based tasks as well as problems to complete class assignments during the face-to-face sessions due to time constraints. According to Bonk et. al. (2002) the results of this research proved that blended learning tasks are preferred by the students

because of their effectiveness, flexibility and immediate feedback. It was also confirmed that traditional teaching may not be the most suitable methodology for certain educational fields. The implementation of new methodologies like blended learning in different academic fields could have a positive impact on this ESP course (Bonk et. al., 2002).

Osguthorpe and Graham's (2003) definition on blended learning indicates that it includes face-to-face instruction with digital resources for practicing what has been learned. It does not consist only on opening a web page in classrooms, but on maximizing the benefits of explaining the participants of a course how to solve problems linked to a specific field. Furthermore, Osguthorpe and Graham (2003) propose three elements that must be combined in blended learning courses:

- online and face-to-face learning activities
- online and face-to-face students (collaboration), and
- online and face-to-lace instructors.

Garrison and Kanuka's (2004) conducted a research and discussed the difficulties of adapting blended learning (BL) in higher education programs. They state that BL is considered as the carefully planned integration of face-to-face sessions with online learning experiences. Characteristics of BL are also included on this work as well as a brief list of the main benefits related to the implementation of this approach in higher education programs. The authors also suggest that BL could be the first step in the process of curriculum redesign in universities due to the impact of this method in critical and reflective thinking.

Task-based Language Teaching (TBLT) in ESP courses

According to Long and Crookes (1992), TBLT is a type of language teaching methodology that is based on tasks as the core unit of planning and instruction. Students are requested to complete a task by using the lexicon, which would be used in real life scenarios.

Nunan (2004) states that TBLT has been considered a suitable approach for ESP courses since it is more focused on motivating learners to produce language based on their learning needs. The ICAO, on its manual for language proficiency (2010) proposes problem-solving tasks, team-building exercises, role-play and simulations as part of the strategies used for Aviation English training.

The Hybrid model for educational programs

Traditional course setting

According to Biddex, Chung, and Park (2014), in the traditional education course setting students are kept within the physical classroom on campus. In here, students are taught the entire scholar year, and pupils maintain interaction with other peers. Similarly, Jaffe (2003) explains that students in the traditional settings are required to only devote their time studying, memorizing, and learning what the teachers or instructors say. Hence, learning was just interactions between student and instructor inside the classroom.

McAndrew, Scanlon, and Clow (2010) allege that teachers consider that the time devoted to lecture is the most important and it takes place in the classroom since they think that face-to-face experiences, interaction and knowledge can only be transmitted at school.

The increase of technology and its impact in education has changed the course settings and the way students learn, though. In relation to this, Garrison & Akyol (2009) state that this shift to technology has allowed public and private educational institutions to consider the application of online programs. Hence, teaching, learning and the classroom itself are not part of a physical campus anymore.

Online Course Setting

With the rise of the Internet and computers, most courses and programs have migrated to the web; nowadays everything is online. Biddex et al., (2014) suggest that teachers can now give their classes and materials by the use of a full online environment where students do not

need to be in a classroom, inside a campus. Although teaching consists of lectures, knowledge can be transmitted through a computer screen from everywhere. De la Vega (2008) alleges that transferring courses online has provided students with the ability to access information in different ways without time and place limitations. Therefore, a wide variety of new technological learning modalities are also being used.

As described by Thille (2010) there is a combination of different kinds of online resources such as multimedia, video streaming, virtual classroom, and e-mails, which can be found in online learning.

Garrison and Kanuka (2004) declare that one big difference between the traditional and the online course setting is that students can access the content as many times as they need to review it. Hence, students are expected to become independent leaners due to the fact that they will not rely on the teachers' lectures all the time.

Bruner (2006) claims that online settings has provided students with the opportunity to obtain different ways to acquire information because pupils will not depend on the in-person classes to obtain information. Similarly, Thille (2014) advocates that technology in an online setting gives the students the possibility to build their own way of learning and find new methods of learning support. Consequently, pupils will be better controllers of their learning experiences and process.

Hybrid course setting

Ekwunife-Orakwue and Teng (2014) explain that the combination of the in-person interactions in the traditional course setting and the online interactions of the online course setting has given rise to the hybrid model. This type of course setting blends the traditional classes that take place in a campus with the contents that can be now found online. "Hybrids permit both the 'reflectiveness' of asynchronous, online communications and the 'immediacy' of verbal interactions" (Brunner, 2006, p. 231).

With the use of the hybrid course, students will not depend only on what the teachers explain in class, but they will have the opportunity to find more information on the web. This could be done thank to the massive amount of information that teachers will replenish the platforms with or the information found on the web. In this regard, Garrison & Kanuka (2004) suggest that the use of the hybrid setting will permit students not only to count on teachers' knowledge, but also on their partners', since they will have access to the material to be used available online.

The Active Learning Theory

With the rise of technologies, we can find new educational theories that allow students to boost their capabilities as well. Active learning is an instructional method with which students feel motivated and engaged in the learning process. Bonwell and Eisen (1991) allege that students have to create meaningful learning activities that make them reflect on about what they are actually working on. Therefore, most of the processes and time in class are devoted to the learners; hence, it becomes a student-centered method. Here, the most valuable is that students can feel really engaged instead of bored with those tedious face-to-face classes all the time (Prince, 2004).

According to Bonwell and Eisen (1991), there are some methods to be used in the classroom:

- Having pauses during lectures are needed in order for students to reflect on what they are learning;
- Having demonstrations and class discussion that allow student to engage in the learning process;
- Including group-work during the class so that students can develop their creativity;
- Implementing case studies that can allow students to think about what they are doing critically.

The importance of the Active Learning Theory

Park and Choi (2014) observe that when there is an active learning atmosphere, the learners feel that they want to participate and collaborate with classmates and this makes students more willing to share their ideas and thoughts. Additionally, with this active learning method, students can perfectly be able to work in the same way that they do in class, using a computer at home, i.e., they could work cooperatively and collaboratively sharing information digitally, too.

When people need to think critically and solve problems easily, the active learning method gives them enough tools to deal with daily-life situations, which are not usually seen or leant, in a regular class.

Benefits of Technological Learning Modalities

Hybrid education has it basis on technology. In short, if there is no technology, there cannot be blended learning. Olapiriyakul and Scher (2006) emphasize that it is thank to technological advances that education can now form hybrid programs that use different learning technologies. For instance, Blackboard and WebCT to maintain online classes. Crabtree and Rodden (2008) acknowledge that personal computers have offered the opportunity to take class out of the classroom. Therefore, technological learning modalities can change the learning experience of the students in high schools and universities. These technological learning modalities benefit not only students, but also teachers since they will count on different ways, strategies and methods with which they could teach.

Flexibility

One the biggest advantages of the hybrid model is that it allows the educational community two settings, which give students flexibility in their academic field. "The potential of a blended approach is endless ... it can produce robust teaching and learning environments and experiences" (Safar & AlKhezzi, 2003, p. 624).

Bruner (2006) states that the hybrid model perfectly combines learning technologies and educational experience of the students since it offers new learning space for the wide variety of learning styles and needs, which will make learners, manage their own learning process. In this view, technological learning modalities keep developing more and more the learning experience of all the learners due to the fact that it offers flexibility, which shapes students' time.

"Blended methods of teaching and learning have the potential to create a solid foundation for promoting learner/student-centered environments" (Safar & AlKhezzi, 2003, p. 619). Sullivan and Freishtat (2013) explaine that "the flexibility afforded to students about when to engage in an online discussion, coupled with multiple opportunities for engagement it provides, makes for improved learning and reflection" (p. 18).

The hybrid model keeps a vital element that allow working with the various types of student learning needs. "Self-paced learning has become possible with computers. Distance learning is not dependent upon time or place and in many ways; it can be more flexible than the traditional model" (Block, 2010, p. 3).

Learning styles in hybrid courses

Beckwith and Cunniff (2009) consider that the Hybrid's model benefits learners who have different forms of acquiring knowledge also called "learning styles" since it represents a great contribution to the process of addressing a suitable theoretical learning approach. Educational programs that combine face-to-face and online sessions allow students to apply learning strategies, which they consider useful regarding the acquisition of new data.

Multiple Intelligences in hybrid courses

According to Gardner (1983), the Multiple Intelligence Theory takes into consideration physiological, sociological, psychological, emotional, and environmental elements implied in the learning process. Gardner & Hatch (1989) defines the intelligence as

the ability to solve problems “that are valued in one or more cultural settings and detailed criteria for what counts as human intelligence’’ (p. 6). The main objective of the Multiple Intelligence Theory is to prove that human beings have various ways of processing information. Gardner (1983) catalogues intelligences in eight categories:

- *Verbal-linguistic intelligence*, which refers the ability of acquiring information through the analysis of data that includes oral and written language.
- *Logical-mathematical intelligence* entails the ability to examine problems logically, notice patterns and reason deductively and think logically. It is also related to scientific and mathematical thinking.
- *Visual-spatial intelligence* denotes the skills to interpret or create visual schemes as well as to understand relationships among images with real spaces.
- *Musical intelligence* comprises the capacity to appreciate sounds, recognize tonal and rhythmic patterns and associate sounds with feelings.
- *Naturalistic intelligence* remarks the aptitude of being good at nurturing and feel the need of protecting animals.
- *Bodily-kinesthetic intelligence* embraces the facility to connect mental abilities to physical activity.
- *Interpersonal intelligence* involves the skills to comprehend the purposes, motivations and needs of other people.
- *Intrapersonal intelligence* consists of the ability of recognizing feelings, fears and motivations on themselves

Gardner (1999) claims that individuals possess all the types of the intelligences listed above; nevertheless, these are developed in different levels of aptitude. He also explains that the fact that learners show interest on a specific field does not necessarily mean that they

would only be educated using traditional teaching materials. Gardner states, "When one has a thorough understanding of a topic, one can typically think of it in several ways…" (p. 7).

Denig (2004) explains the scenario for meaningful learning is when the teaching strategies applied in a course vary taking into consideration student's preferences. Multiple formats, settings, and interactions would benefit learning and, thus, they provide a further understanding on how the hybrid model contributes to develop students' intelligences in the process of learning, as it is stated by the same author "Intelligence is more than a score on a typical standardized pencil-and-paper test used to predict success in school" (Denig, 2004, p. 98).

Beckwith and Cunniff (2009) also associate learning formats of hybrid education and Gardner's (1983) multiple intelligence theory, the authors state that "A hypermedia instructional approach, such as that ... incorporated in a part onsite program called a hybrid, is arguably a feasible and economical approach to addressing the multiple intelligences in instruction" (p. 22). They consider this approach as part of the methodology that improves the process of learning and develops intelligences in a classroom.

In their research, Beckwith and Cunniff (2009) explore the effects of hybrid education on learning. Results of the comparison between hybrid and traditional methodology show that the former instruction motivates learners to further practice knowledge acquired in class using online resources, and the latter, limits students to use the materials given by the instructor during face-to-face sessions, which in some cases cause memorization of knowledge.

The authors also consider that the use hypermedia instructional techniques activate and develop the learner's multiple intelligences in a more effective way than an onsite course.

The consolidation of a learning community

Brunner (2006) states that research on hybrid education indicates that learning communities are built within the context of this type of instruction. As explained by Garrison

and Akyol (2009), technology allows the creation of communities where students apply collaborative strategies in the process of learning. These authors consider that instructional technologies such as "Blackboard or WebCT" ease the communication needed among learners and the instructors for meaningful knowledge construction.

Martyn (2003) claims that the hybrid online model entails face-to-face contact as well as extensive computer-mediated communication. The use of synchronous and asynchronous tasks and chats has increased the number of individuals who are involved in hybrid education. This fact has produced what researchers called “learning communities”, whose main characteristic is to acquire knowledge through the implementation of technological instruction that is also known as learning modalities (Ching & Foley, 2012).

Olapiriyakul and Scher (2006) state that learning technologies provide students with opportunities to exchange knowledge in a collaborative learning environment that takes place beyond the physical classroom. These authors present the idea that the use of technology and interactions may contribute to the definition of students’ professional interests in relation to high-tech mediums, as learners must develop skills in the use of computers and network technology to take full advantage of their features in the learning process.

Sullivan & Freishtat, (2013) state that the hybrid course merge teaching styles that provide learners with more probabilities to discover more information to build meaningful knowledge. Therefore, the application and development of interactional skills are placed among the factors that have led the creation of learning communities within the context of hybrid instruction.

Online Access to course materials

According to Picciano (2009), his research in the Hybrid model presents the potential of the inclusion of this approach in higher education programs as a factor for increasing the

number of students in universities. Young adults who do not have time to attend regular classes may use online platforms to have access to course materials at any moment.

Thille (2010) presents the advantages of using of technology for educational purposes after conducting a research related to the application of the hybrid and traditional teaching model for the same topic. The results of this research indicate that the students acquire knowledge in less than the half of the time in hybrid settings than in traditional instruction. It also reveals that costs might be part of the negative factors for its implementation in higher education programs. However, the importance of having a degree has motivated to increase the number of students who own personal computers as well as internet access (Thille, 2010).

The hybrid model proposes the use of learning technologies for teaching and learning processes, based on the fact, that hybrid education may enlarge the number of students in higher education settings (Lovett, Meyer & Thille, 2010). Nevertheless, one of the difficulties that academic institutions have to analyze before implementing online education is how learners will be guided and assessed during the course. Additionally, the resources and materials must be enough to develop the abilities required on a specific academic field, for that reason, Lovett, et. al (2010) explains that "The more a course is web-based and relies less on an instructor, the more resources are saved "(p. 6).

Hybrid learning challenges

Even though the hybrid course model has numerous advantages for learners during instruction, there are also various aspects that represent a challenge during its implementation. One of them is the impact of technological learning modalities in order to establish the objectives, goals and outcomes of a hybrid program (Ocak, 2010). Another aspect that may interfere with hybrid courses is when technology does not operate as expected since this approach can foster dependence for students and instructors (Thille, 2010). The change from

the traditional to the integrative hybrid course setting has played an important part in the transformation the instructors' role (Ocak, 2010).

According to Sullivan and Freishtat (2013), the instructors' role in hybrid instruction faces further challenges, these are:

Technological and Developmental Support: Learning technologies applied for teaching and learning processes may interfere in some cases with system, as well as human failures. There are some researches who have pointed that including technology into the learning environment may be counterproductive if teachers do not have the ability to utilize technical devices. Ocak (2010) states that members of faculties need to be provided with full access to technical and pedagogical support, which would motivate them to implement new classroom technologies. Otherwise they should not be part of these programs. Garrison and Akyol (2009) also claim that the lack of technical support for teachers who apply hybrid models on their classes represents an obstacle in the application of this approach.

Consequently, the organizations that are planning to implement the hybrid education must pay especial attention to solve all the possible technical issues linked to the technological aspects required on learning modalities because of the impact that they could have on all participants and processes (Olapiriyakul & Scher, 2006).

The evolution of the Instructor's role: The technological learning modalities merged in the process of acquiring knowledge in the context of the hybrid model has modified the way students receive information during online and face-to-face sessions. Consequently, this fact has also produced some changes in the teacher's role as well as methods to deliver course material (Martyn, 2003).

Garrison and Akyol (2009) remark that the responsibilities of the traditional instructors are to plan lectures, which include discussions only through in-person interactions. They state that the implementation of hybrid education is transforming the learning paradigm,

particularly in university programs, since the inclusion of technology enables instructors to release materials and information in order to be analyzed by learners without having the need of being guided by the educator.

Jaffle (2003) presents a study that analyzes the role of the instructor in higher education at a public university. This research reveals that the participants suggest that memorization material should be discarded from the instructor's teaching resources. One student states that the instructors should focus on the application of knowledge to particular problems by using Up-to-date materials

Intellectual Property: Most of the lecturers prefer to maintain their courses contents as restricted as they can. Therefore, it is important to control the access to intellectual property (Whelan, 1997). Hybrid education programs must assure that the access to their courses have all the needed security protocols, and this can be accomplished by setting up the tools provided by online platforms in terms of privacy (Lawhead, 1997). It is imperative to mention that the fact that inline platforms utilize username as well as password in order to access content contributes to the control of intellectual property (Lawhead, 1997).

Challenges may also be produced on how to control changes to Web-based materials, several solutions have been proposed; one of them is to watermark PDF notes or protect documents from editing as well as to detail personal information in headers or footers that provides this extra element of security (Molloy, 2003).

The Principles of Online Teaching

The study conducted by Dr. Lawrence C. Ragan (2009), Director of Instructional Design and Development for Penn State's World Campus is cited in the digital publication "10 Principles of Effective Online Teaching: Best Practices in Distance Education". Here he defines the performance expectations of the online instructor. The following text is a summary of his work in the afford mentioned publication:

Principle # 1: To conduct the class from beginning to end and to make adjustments when necessary in order for the student to complete the learning experience. The teacher must be careful with the misimpression that the online class "teaches itself."

Principle # 2: Practice proactive course management strategies. The strategies include, but are not limited to, monitoring assignment submissions, communicating and reminding students of missed and/or upcoming deadlines, and making course. Monitoring and managing student performance (or lack thereof) may happen by simply reviewing the posting log or activity records in the learning management system. The goal is to empower the online learners to take responsibility for managing their own learning experience. Most learning management systems provide a rich array of tools that assist the teacher in attending; for example, reporting functions such as summaries of student online activity, participation in discussion groups and completion of course assignments can easily be generated and tracked.

Principle # 3: Establish patterns of course Activities. Establishing a pattern of course activity and communicating this sequence to the learner enables the learner to develop a plan of study to address the requirements of the course. This course's schedule and pattern also aid the instructor to contain the course-related activities to an appropriate duration and workload.

Principle # 4: Plan for the unplanned. The good news and bad news of instructing in an online course is that there are fewer technology-related excuses for not being able to continue the course operation. Travel, either locally, nationally, or internationally does not typically deter course activities because a reliable internet connection is often an "internet café" away. Even though, situations may arise, and the instructor must plan in advance for such scenarios: an email, course announcement page posting or phone message describing the interruption and when the course activities will resume. This will alleviate the anxiety of the learner whose primary contact is through the course instructor.

Principle # 5: Response requested and expected. The challenge for the online instructor is defining a reasonable timeframe for responding to student inquiries, assignments, or discussion postings. Left to individual instructor discretion, a "reasonable" response timeframe may vary from 24 to 72 hours.

Principle # 6: Think before you write. In the online classroom, depending largely on the written word, the expression of ideas, opinions, humor, criticisms or praise represents a "simpler" form of communications stripped of other visual cues. This leaves text messages delivered open for a degree; i.e., there is more interpretation or misinterpretation by the receiver.

Principle #7: Help maintain forward progress. Students in the online classroom rely on the timely return of assignments and exam grades in order to maintain progress in their studies. The instructor is asked to facilitate this process. Planning for timely feedback of assignments and exam grades serves to establish milestones. Clearly define assessment strategies for determining student achievement of course and module level objectives at the time of designing the course.

Principle # 8: Safe and Secure. It is highly recommended that all course-related communication between the instructor and the student occur within institutionally supported and maintained communication systems. Clearly define the acceptable communications methods to students for all course-related activities. Describe the appropriate method for posting general course questions as well as personal emails. All data is stored on institutionally managed systems ensuring confidentiality and security.

Principle # 9: Quality Counts. High-quality course content is essential for a successful learning experience. For this reason, instructors should monitor and address dimensions of the course that may influence course integrity, including inaccurate course content, editing errors, confusing information and instructions, broken links, and other course design issues.

Principle #10: (Double) Click a Mile on My Connection. Online course delivery requires access to high-speed Internet access (DSL, cable modem, or satellite). Instructors should access the complete description of the technical requirements for their program in order to ensure compliance. Access and monitor institutionally stated technology platform requirements. Prior to course delivery "pilot test" the course system. This may include inviting colleagues, students or family members to access and use the various system features.

Assessment models for online learners

On the eLearning Industry website, Pappas (2015) arguments about the formative assessment in eLearning as what it should be used for tracking knowledge mastery, or how progress should be assessed after initial diagnostic tests. Formative assessment is to offer learners feedback that they can use to improve their eLearning experience.

Rather than simply giving them a grade, the teacher is able to identify areas that may need improvement during the eLearning course. On the other hand, summative assessment, is used to determine whether or not a learner achieved the academic objectives and reached the desired level of proficiency at the end of a course.

As Pappas (2015) mentions, there are some special types of assessment that teachers must know in order to include them in the course. They are as follow:

- **One-on-one discussion**

The instructor meets with a learner to discuss expectations and assesses their current knowledge base and skill sets. Typically, the facilitator will ask each learner a pre-determined set of questions to identify areas of improvement. This can be carried out face-to-face or via an online chat.

- **Instructor observation**

The instructor observes learners as they are completing online activities and assesses the proficiency and skill level of each individual.

- **Personal online learning logs**

Learners are asked to create a personal online learning log or journal that details what they are learning, their thoughts and feelings about the topic, and the core ideas or concepts of the online lesson. The instructor can then use this log to track the learners' progress.

- **Group presentations**

Learners work together or independently to create an online presentation that must be presented to their peers. The learners are provided with criteria beforehand.

- **Self-assessment**

Learners are encouraged to reflect upon their own eLearning experience and determine their level of proficiency or knowledge mastery. They may also be evaluated by their peers, who can give them feedback.

Principles to observe when using formative assessment for online courses: (Pappas, 2015).

- Provide immediate feedback.
- Student progress dictates the direction of your eLearning course.
- Identify measurable strengths and weaknesses.
- Bear in mind that formative assessment in eLearning is not strictly about marks students get, but progress they make.

Educational projects

Project

According to the Project Management Institute (2013), a project "is a temporary endeavor undertaken to create a unique product service or result… whose outcomes can be tangible or intangible" (p. 3).

According to the World Organization for Standardization as ISO 10006 version (as cited in, Kousholt, 2007) "The project is a unique process that consists of a set of coordinated and controlled activities, containing dates of beginning and ending, undertaken to achieve an

objective conforming to specific requirements, including time constraints, of costs and resources" (p.15). This concept has its origin in the business field that can be extrapolated to the educational field.

Educational Project

A comprehensive definition is given by Fernándes Barbosa and Guimaraes de Moura (2013), who describe the educational project as:

> An initiative or group of activities with clearly defined objectives based on problems, needs, opportunities or interests of an educational system, of an educator, or groups of educators and students, with the purpose of carrying out actions seeking human formation, to the construction of knowledge and the improvement of educational processes (p. 19).

Intervention project

Project of intervention are the ones developed in the context of organizations, with the purpose of introducing modifications in structure and / or the dynamics of the organization for positively affecting its operation. The intervention projects aim to solve problems or identified needs (Fernándes Barbosa & Guimaraes de Moura, 2013).

Project Management

As Harvard Business Review (2004) suggests this is the allocation, tracking and utilization of resources to achieve a particular objective within a specified period of time. Elements in project management are the same:

1. Defining and organizing the project
2. Planning the project
3. Managing project execution and timing
4. Closing down the project

Planning the project

Planning is the second phase of the project management process. It is necessary to anticipate actions to be taken, this begins with the objectives and the set of tasks that must be completed. Planners must decide in what order, within what time frame they must be completed, and who must accomplish each one (Harvard Business Review, 2004).

Project Team

Every project is made up by a team, which has a single manager. This team is the responsible for recruiting effective participants who would provide their specific skills on different fields of knowledge (Harvard Business Review, 2004).

Problems diagnosed

According to Rebiere and Rebiere (2017), before starting a project, it is necessary to diagnose the problem, to identify the needs and prepare the objectives/strategies based on the diagnosis. It must be determined who the members of the project team will be. In the educational field, for instance, a pedagogical coordinator and an operational coordinator will be needed. The latter will take care of the administrative issues.

As Rebiere and Rebiere (2017) continues, in order to carry out a project in good conditions, an execution planning must be established with the tasks to be accomplished and the people who will ensure their realization. Operational management of the project needs to consider the following aspects:

- The implementation of the project.
- The actual realization of the planned actions.
- The monitoring of the planning in order to be readjusted if necessary.
- The progress of the products realization.

Steps of project reporting

From the Harvard Business Review (2004) it is listed the moments and order in which every step must be done.

1. Problem identification
2. Data collection and analysis
3. Project goals
4. Project planning, timing and strategies of encouragement
5. Needs Analysis Plan
6. Monitoring, evaluation and Lessons learned

Timing – Gantt chart

Gantt charts are used for scheduling work. It indicates the start and completion dates for all the activities and recognizes the relationships among activities and team members who are in charge of executing the tasks (Harvard Business Reviews, 2004).

Monitoring and Evaluation

Activities under control must be monitored. It should be checked the quality of output, whether work processes and correct functioning are appropriate along periods milestones, in order to ensure that work is on schedule (Harvard Business Reviews, 2004).

Chapter II

Literature Review

The International Civil Aviation Organization (ICAO) is considered as one of the most significant organization around the world, whose main goal is safety in aviation. It has enormously contributed to civil aviation internationally (MacKenzie, 2010). Some of the most important and relevant characteristics ICAO proposes for the creation of an English for Specific (ESP) course will be explained in the following paragraphs included in this chapter.

International Civil Organization (ICAO)

INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) was founded in December 7, 1944, after the signing of the Convention of International Civil Aviation, also known as the Chicago Convention, by its 52-member states. The main objective of this organization is to promote and maintain safety, efficiency and cooperation in civil aviation (ICAO, 2015). Currently, ICAO works with its 191 Member States and other groups to guarantee the obedience of Standards and Recommended Practices (SARPs) for civil aviation. The need of setting language proficiency requirements for pilots and air traffic controllers was first made during a session of the ICAO Assembly in September 1998 as an immediate measure to several fatal accidents in which the deficiency and low level of English was considered as a contributing factor (ICAO, 2010). Nonetheless, it is of vital importance to mention that the ICAO language proficiency requirements cannot remove all potential sources of miscommunication in radiotelephony communications; but the goal is to make sure that all speakers have enough language proficiency to handle non-routine situations.

According to ICAO (2010), there are three possible reasons of why language use may be the main cause of accidents: (1) Incorrect use of standardized phraseologies. Although ICAO has published its standardized phraseology, a survey revealed that 70 percent of all

speech acts articulated do not fulfil the recommended standards since phraseology does not include all possible situation and pilots/air traffic controllers' (ATCOs) need; (2) Lack of plain language proficiency. The influence of the level of language proficiency of both the pilot and the ATCO must be balanced; otherwise one of the sides struggles to understand the situation or concerns and it can turn into a disaster; (3) Use of more than one language in the same airspace. Flight crews who are not fully prepared to understand the language used for radiotelephony are a hazard in regular operations (ICAO, 2010). Hence, it can be stated that the ICAO language proficiency requirements seek to improve communications thereby enhancing safety, i.e., they will enable speakers to identify errors and work towards the successful and safe resolution of misunderstandings in a much better way.

Manual on the Implementation of ICAO Language Proficiency Requirements

ICAO published the first edition of this manual in 2004 and due to the fact that there was the need of establishing guidelines for Aviation English programs, a second edition was printed in 2010. Among the aspects listed by the organization, it is clearly stated that any valid aviation English training must be designed with specific tasks that allow learners to address the six language skill areas which are detailed in the ICAO Rating Scale. These are: pronunciation, structure, vocabulary, fluency, comprehension and interactions. This document also specifies that the training must guarantee that all students achieve proficiency at least at ICAO Operational Level 4 in all six skill areas, otherwise the participants will not obtain the license (ICAO, 2010).

ICAO (2010) has established an analytical rating scale and a set of holistic descriptors to describe the level of language proficiency required by pilots and Air Traffic Controllers (ATCOs). These are the main characteristics of the skills evaluated in Aviation English proficiency stipulated by the ICAO:

- Structure and Vocabulary descriptors which refer to circumstances that are not common or unexpected, whereas Comprehension and Interactions descriptors refer to a change of plans or events. Within the context of radiotelephony communications, these descriptors can be understood as conditions, which diverge from intentional, routine and predictable aircraft operations.
- To provide appropriate management from standard phraseology to plain language. The Fluency descriptor refers to the change from studied or prescribed speech to natural interaction.
- Finally, though not linked necessarily to radiotelephony communications per se, both Vocabulary and Comprehension descriptors refer to a test taker's ability to talk about and understand 'work-related topics', which can be interpreted as any topic connected to the professional lives and activities of pilots and ATCOs, including communications on the radiotelephone.

The International Civil Aviation English Association (ICAEA)

The International Civil Aviation English Association (ICAEA) is a non-profit association whose mission is to ease connections among individuals and organizations involved in the use of English in aviation in order to increase the need of having the appropriate language proficiency levels in this field. This organization is in charge of raising awareness of the effect that communication has in aviation safety. ICAO Circular 323 was co-written by ICAEA and ICAO to establish a set of guidelines and best practices by which programs of aviation English must be designed, delivered, staffed, managed and assessed for appropriacy, efficiency and cost-effectiveness (ICAEA, 2017).

The main objective of this organization is to promote and improve aviation English in order to avoid miscommunication errors that can cause disasters. The mentioned guidelines gather the expertise and experience of the different staff of the Board and members of the

International Civil Aviation English Association (ICAEA) as an essential part of its commitment to improving standards when training teachers of aviation English (ICAEA, 2017). The four areas that are described in this document are: Training design and development, which must be driven by the constraints and framework established by the ICAO language provisions, which will define the objectives of the training program. These objectives are described in the following four sections. Training delivery, Trainer profiles and backgrounds and Trainer training.

This document confirms the importance of recognizing Aviation English as part of English for Specific Purposes (ESP). The process and goals as well as the methodology must be aligned under the parameter established for ESP, which are based on the learners' needs and differ from those applied in English as a Foreign/Second Language (TEFL/TESL). The aviation English trainer must bring to the class a mixture of specific language teaching skills and the expertise of the practical operational environment within the aviation context among its participants. The course materials are required to be relevant researches and documents supported by the use of visual aids that allow learners to become familiar with aviation topics in order to create meaningful experiences (ICAO, 2009).

Communication according to the ICAO's parameters

The first term defined by the ICAO on its manual (2010) is communication, which is considered the core of Aviation English. The major component of communication within the context of fight operations is language proficiency. Based on the traditional model of communication, the main participants are the sender, the channel and the receiver. This form of communication is also addressed by the ICAO language proficiency requirements (ICAO, 2010).

The ICAO (2010) explains on its manual the process of communication. The speaker and hearer are part of an important phase of communication. The speaker translates his or her

intended meaning by using terminology adapted to Aviation. This phrase is understood by using the appropriate channel in the form of a sound-stream that is received and decoded by the hearer. The hearer's successful or unsuccessful representation of the message is what determines the end of flight operations (ICAO, 2010).

The ICAO (2010) remarks that accuracy is relevant for communicational purposes in radiotelephony conversations. These channels of communication comprise various factors such as:

- The utterer's initial and ongoing representations of the listener,
- The expectations of the hearer regarding message content,
- The need to provide feedback (backchannel) to the speaker on the state of the hearer's understanding (ICAO, 2010).

The model speaker, perfect channel and ideal hearer represented on the ICAO's manual do not include the possible accidental conflicts of communication such as disruptions of attention and background noise. For that reason, it is clear that the speaker and hearer's ability to send and decode utterances plays an important role in successful communication. This is the field of language proficiency (ICAO, 2010).

Language Proficiency according to the ICAO's parameters

According to the ICAO (2010), Language proficiency in Aviation does not consist on a set of grammar rules, vocabulary and ways of pronouncing sounds. It is a complex process of interaction using technical terminology and a number of skills and abilities (ICAO, 2010). Aviation English proficiency varies substantially in nature from many of the other subjects related to linguistic which are part of regular curriculums (Wang A. , 2007).

According to the ICAO (2010), Oral language proficiency refers to:

- Skill based performances on fundamental competences.

- Complex skill performances resulting from the combination of subskills that constitute part of communicative competences.

The ICAO (2010) considers subskills or parts of communicative competences. The following areas of the language are:

- The use of terminology as well as phrases use in Aviation English;
- The use of grammatical structures;
- The understanding and use of the sounds or tones, which would be part of meaningful sounds stream.
- The adjustments of interactions based on discourse, social, cultural and professional norms related to the field of Aviation.

The effective combination of these subskills is part of the process of building communicative competences within the context of Aviation (ICAO, 2010).

Communicative Competences according to the ICAO's regulations.

Canale & Swain (1980) define Communicative competences as the conscious or unconscious knowledge of language as well as other aspects of language use. According to Widdowson (1983), the development of linguistic, sociolinguistic and pragmatic competences is required to master a language. The ICAO (2010) on its manual for language proficiency in Aviation English explains the three main competences required for this field.

- The *linguistic competence* refers to the features of a language. In Aviation, speaking and listening skills are essential, for that reason these competences are divided in four distinct subskills:
    - Lexical (single words, fixed expressions);
    - Grammatical (rules of syntax, morphology);
    - Semantic (meanings, meaning relationships); and
    - Phonological (sounds, syllable structure, sentence stress, rhythm, intonation).

- The *Sociolinguistic competence* involves the understanding of social or occupational context in which individuals use the target language. In Aviation English, this means being able to make appropriate use of special terminology associated with the field.
- The *Pragmatic competence* entails the various skills which are used to provide meaning to language in a given situation or context. In Aviation English this refers to:
    - *Strategic competences*, which include how language users develop the necessary skills to produce accurate communication while flying.
    - *Discourse competences*, which are the abilities to combine plain language and phraseology to convey a message.
    - *Functional competence*, which is related to the awareness of using language structures that are established as part of Aviation English lexicon also known as "language functions".

Language Performance according to the ICAO's regulations.

The ICAO (2010) states that the competences required for language proficiency in Aviation are part of mental and physical skills or "constructs" which are not directly observable. Some of them can be inferred in individuals only by analyzing performances using the target language in specific situations. There are a number of factors that may affect language proficiency in Aviation, especially in the areas of fluency, comprehension and interaction; these factors can be levels of attention, mood, stress, verbal working memory and verbal processing abilities (ICAO, 2010).

Language errors and miscommunication according to the ICAO's.

The ICAO (2010) alleges that language errors in Aviation can take place during reception or understanding a message as well as and the production of utterances. These can be catalogued as failures regarding complying norms of the language system established in the Aviation field. Nevertheless, errors can commonly take place in language performance,

and their impact in fields like Aviation can be the cause of lethal accidents (ICAO, 2010). The need of improving performance while flying is one of the main objectives of the manual of proficiency in Aviation English that the ICAO created in 2010. This manual enlists the characteristics that Pilots or Air Traffic Controllers must possess in order to obtain a license for national and international flights (ICAO, 2010).

Errors may be denominated as “local” or isolated to one language item or “global”, which would negatively affect the meaning of a whole message. Recognition of these errors is what has contributed to the development of the ICAO Operational Level 4, which is considered the minimum requirement labeled as “acceptable” to guarantee safe operations (ICAO, 2010).

Methodology for Aviation English Programs according to the ICAO

Communicative tasks must be part of the process of acquiring aviation English. The use of the language in operationally relevant situations is the final objective of the course; therefore, trainers must pay particular attention to enhancing oral production based on real life activities. The methodology applied in this type of course takes into consideration not only content but also appropriate activities and language functions, situational content and oral cues to construct the class to give it a very strong oral focus. It also considers the constant need of intrinsic motivation in the process of building up self-confidence in order to improve speaking and interaction with other students (Wang, 2011).

Among the activities suggested by the Guidelines for Aviation English Training Programs (2009) are:

- The use of flight simulators and flight deck training videos.
- Request national authorities to facilitate access to operational environments for trainer training purposes.
- Listen to recordings of live traffic online.

- Study cockpit voice recording transcripts from authentic incidents
- Use the natural dynamics of classroom teaching for students to inform their trainers of operational realities.

It is also suggested by the ICAEA the use of Blended Learning due to the fact that participants of the course are professionals with busy schedules; however, it is mandatory for trainers to pay special attention to the process of monitoring the progress of the leaners combining elements of self-study and classroom trainer-led sessions. Instructors must evaluate the aspects of the training process, which require live face-to-face classroom sessions. With reference to the six language skill areas in the ICAO Rating Scale and holistic descriptors, which are often called as “foundation skills” (structure, vocabulary, listening comprehension and, to a certain degree, pronunciation) they can easily be practiced in the autonomous hours of study inside of a lab or computer-based learning environment. For these reasons, blended learning can represent a more efficient approach for allowing trainers to use classroom sessions to reinforce topics that take more time to be studied (ICAO, 2009).

Assessment for Aviation English Programs according to the ICAO

In the Guidelines for Aviation English Training Programs (2009), the assessment process suggests taking into consideration the different types of evaluations that must be included during the course. It is important to have a clear perspective between the purpose, content, timing and level of reliability of different types of tests. In the process of teaching aviation English, trainers must use progress and exit tests extensively. The suggested evaluations are:

- *Benchmark test* which offers an estimated approximation of the participant’s language level with the purpose of defining training requirements;
- *Entry test (Placement)* which measures the potential students’ language ability in order to have homogeneous groups of learners;

- *Progress tests* which are needed to evaluate students' acquisition of language during the training process, referring directly to course content and skills covered to date;
- *Exit tests*, these have the objective of making sure that students have satisfactorily developed the skills and acquired the necessary knowledge, which allow the goals of the course to be achieved.
- *Proficiency evaluation*, which is the final examination that certifies the effective level of operational abilities in the language by recognizing all the relevant content, functions and situations of the aviation field.

According to these guidelines, in the case of having a student who may not show the same progress as the rest of the group, there should be the possibility of having remedial tests. There are learners who require more time in certain areas, for example: student A may require more time on pronunciation, whereas student B may have more difficulty with listening comprehension. That is why progress tests reveal the need of some additional work to be done so that it is possible to follow the progression of the rest of the group (ICAO, 2009).

Once again, the ICAO's recommendation is to use "blended learning" for these cases, an aviation English training curriculum must always have the plan for remedial training, it can be presented in the form of either additional exercises or tasks without presenting the same questions all the time.

Aviation English Training programs

Profiles and Background

According to the guidelines established the ICAO for Aviation English Programs (2009), instructors must be qualified in Teaching English as a Foreign Language (TEFL) as well as to possess a technical or operational experience in Aviation training. The fact of counting with professionals on language teaching is a fundamental requirement for the course to be effective.

Wang (2011) states that Aviation English is an example of English for Specific Purposes (ESP), and the teacher of this subject must be aware of the goals and the learning strategies employed in ESP courses.

As there is a difference in teaching General English to Aviation English, it is preferable to have trainers who know how to apply the most suitable teaching methods in ESP training programs.

Trainers' attitude towards teaching Aviation English

The ICAO (2010) highlights the characteristics related to the trainers' attitude during Aviation English program due to the fact that negative factors may affect learners' performance. Students must feel confident enough to use the language in communicational tasks in which the trainer's teaching attitude influences in the process of developing fluency as well as interaction.

Alderson (2008) considers that trainers of Aviation English programs must possess the characteristic of being coordinators, facilitators, observers, and tutors who know when to step in and take a more assertive role during the instruction. As most of the institutions related to Aviation training are implementing blended learning on their programs, the focus of the trainer-led classroom sessions is centered in oral production, and for that reason, the role of teachers is to offer learners a supportive and communicational environment.

Linguistic skills and Aviation English familiarity of the trainer

In the guidelines for Aviation English Programs (2009), the process of teaching is described as an activity in which factors like: personality, attitude, inventiveness, cultural awareness and general sensitivity to others are particularly important. Therefore, the profile of possible trainers in Aviation English courses must not be only based on qualifications but also in combination with the skills and teaching experience.

In the work Wang conducted (2007), it is suggested that the aviation English teacher should provide learners with specific language in the context of operational environment in the aviation community. The balance between the two areas will benefit students who wish to reach the minimum proficiency requirements established by the ICAO to obtain a license that enables them to fly according to national and international regulations.

The ICAO (2009) also highlights that the fact of having trainers with operational backgrounds, controllers or pilots will represent a plus in the process of Aviation English programs, as they might be familiar with the day-to-day realities of aviation and radiotelephony operations. Nevertheless, it is necessary to take into consideration the importance of having formal teaching qualifications.

The need of authentic material in Aviation English Training

In the Guidelines for Aviation English Programs (2009), it is specified that trainers must be exposed to relevant books, researches, official documents as well as aviation videos for preparing their classes. These represent effective ways of becoming familiar with aviation topics. Live operational situations also contribute to learn issues related to technical infrastructure and radiotelephony communication from a professional point of view.

The importance of the ICAO's language proficiency requirements.

According to the ICAO (2010), the so-called Manual on the Implementation of ICAO Language Proficiency Requirements also known as Doc 9835 represents a guide in the process of Aviation English training. This document is the product of research in the context of aviation. The ICAO's manual also contains Standards and Recommended Practices (SARPs) that highlights the effect of language proficiency in flight operations.

Kim and Elder (2009) state that the ICAO's manual incorporates experiences related to the Aviation industry based not only on the expertise but also on academic research conducted to avoid miscommunication. It is described to be indispensable the need of

analyzing the content of the manual for English Language Proficiency requirements as well as the Guidelines of Aviation English programs for all the institution involved in testing and training in this field.

The ICAO's Rating Scale

The ICAO (2010), on its manual states that the PRICESG Linguistic Company was in charge of looking for speech samples from around the world to determine the ICAO's Rating Scale. These were incorporated into the ICAO Language Proficiency Requirements based on proficiency testing and language assessment. The main and specific rating examples are useful to all Aviation English trainers because they establish the framework of training goals. Alderson (2008) explains that the rationale sheets presented on the ICAO's manual provides accurate examples of the evaluating criteria in which speakers will be assessed in the examinations established by the ICAO. Figure 2 and 3 illustrate a summary of the ICAO Language Proficiency Rating Scale. The original is a more detailed one; however, the chart shown below still includes the most relevant descriptors.

LEVEL	PRONUNCIATION	STRUCTURE	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTION
Expert 6	Mother tongue almost never interferes with ease of understanding	Grammatical structures and sentence patterns are consistently well controlled.	Able to communicate in an effective way on a variety of both familiar and unfamiliar topics. Here, vocabulary must be idiomatic, nuanced, and sensitive to current register.	Able to speak naturally at length, varies speech flow for stylistic effect, uses discourse markers and connectors spontaneously.	Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties.	Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues and responds to them appropriately.
Extended 5	The first language or regional variation can interfere very little with ease of understanding.	Basic and complex grammatical structures and sentence patterns are consistently well controlled with errors which sometimes interfere with meaning.	Vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work-related topics.	Able to speak at length with relative ease on familiar topics but may not vary speech flow as a stylistic device. Use appropriate discourse markers or connectors.	Comprehension is precise on common, concrete, and work-related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events.	Answers and responses must be direct, suitable, and informative. Manages the speaker/ listener relationship effectively.
Operational 4	The first language or regional variation sometimes interfere with ease of understanding.	Basic and complex grammatical structures are used creatively and are usually well controlled. Errors occur in unusual circumstances, but rarely interfere with meaning.	Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work-related topics. Often paraphrase successfully in unusual circumstances.	Produces stretches of language at an appropriate tempo. There may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction.	Most communication precise on common, concrete, and work- related topics when accents are sufficiently intelligible for an international community of users.	Responses are usually immediate, appropriate, and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events by checking, confirming, or clarifying.

Figure 2. The ICAO Language Proficiency Rating Scale. Adapted from Taken from "Manual on the Implementation of ICAO Language Proficiency Requirements, Doc 9835" by ICAO, 2004, p. A-7.

LEVEL	PRONUNCIATION	STRUCTURE	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTION
Pre-operational 3	The first language or regional variation and frequently interfere with ease of understanding.	Grammatical structures are basic and sentence patterns related to predictable situations are not well controlled all the time. Errors often interfere with meaning.	Vocabulary and accuracy are frequently enough to communicate on common, concrete, or work-related topics, but it is limited, and the word choice is not appropriate.	Produces stretches of language, but phrasing and pausing are often inappropriate. Hesitations or slowness in language processing may prevent effective communication.	Comprehension is often accurate on common, concrete, and work- related topics when the accent is intelligible for an international community of users. Fail to understand a complication or an unexpected turn of events	Responses are sometimes immediate, appropriate, and informative. Inadequate when dealing with an unexpected turn of events.
Elementary 2	Pronunciation, stress, rhythm, and intonation are deeply predisposed by the first language or regional variation and interfere with ease of understanding.	Shows limited control of a few memorized grammatical structures and sentence patterns simple to use.	Vocabulary is partial, and it consists only of isolated terms and memorized phrases.	Short and isolated, memorized utterances are produced with frequent pauses.	Comprehension is limited to isolated, memorized phrases when they are carefully and slowly articulated.	Response time is slow and often inappropriate. Interaction is limited to simple routine exchanges.
Pre-elementary 1	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.

Figure 3. The ICAO Language Proficiency Rating Scale. Adapted from Taken from “Manual on the Implementation of ICAO Language Proficiency Requirements, Doc 9835” by ICAO, 2004, p. A-8.

Aeronautical Radiotelephony Communications

According to the ICAO (2010), the features of language and language proficiency that describe aeronautical radiotelephony communications are needed to develop Aviation English training programs in order to test the level of proficiency required for this field. Specialists and operational managers who wish to provide these professional services will have as main goal to raise the awareness of the use of language phraseology as well as plain language to avoid the dangers related to voice communications in both pilots and controllers, particularly in cross-cultural communications (ICAO, 2010).

General language and special purpose language

The ICAO (2010) states that language proficiency is needed to understand especial uses of Aviation English during flight operations. For this reason, it is mandatory to expose the participants of this type of ESP courses to real-life experiences like: radiotelephony conversations or official documents, which are associated to the use of the language. These resources would enable learners to recreate environments for natural acquisition of terminology related to Aviation (ICAO, 2010).

Effective language-teaching programs must take into consideration the importance of providing learning environments that match the required characteristics that are mandatory to offer students a realistic context of Aviation in terms of communicational purposes as well as the tasks which fulfill these goals.

Specific Features of Aeronautical Radiotelephony Communications

According to the ICAO (2010), there are some considerations that must be revised before implementing an Aviation English training course, particularly for radiotelephony communications. Language functions are crucial to determine the vocabulary as well as grammatical structures required during flight operations. For that reason, pilots and

controllers must be exposed to tasks which are based on specific themes and topics that commonly take place in the Aviation field.

The ICAO (2010) provides a list of topics, language functions and grammatical structures that must be included on Aviation English programs. These are presented in the form of checklists with the purpose of providing language course planners and teachers with the necessary knowledge to set goals and linguistically appropriate objectives for training and testing.

ICAO's Holistic descriptors

The ICAO (2010) establishes a group of descriptors for language proficiency in Aviation; these are included on the Appendix 1 of the manual of Aviation English requirements. The difference between the Rating Scale and the descriptors is that the former evaluates individual features of language use and the latter has the objective to define the communicational abilities of Aviation proficient speakers (Wang A. , 2007).

According the ICAO (2010), the five holistic descriptors establish the characteristics of Aviation speakers and a set context for communications during flight operations. Each descriptor is described below:

- *Proficient speakers must communicate efficiently in radiotelephony conversations and in face-to-face situations*. Body language is not part of radiotelephony communications. For that reason, this type of communication is considered more difficult and challenging. It requires a high level of language abilities than face-to-face interactions. This holistic descriptor highlights the need for training and testing to offer voice-only settings while training to demonstrate language proficiency.
- *Proficient speakers must be able to stablish communication on mutual, real and work-related topics with exactness and clarity*. Setting is an important factor for communicational purposes, and an individual's language proficiency may vary in different

contexts. This holistic descriptor sets the limits within the field of the communicative requirements to work-related topics. Air traffic controllers and pilots are expected to interchange information related to issues in their field of professional practice. The ICAO's (2010) provides a list of topics and domains appropriate to language as well as content for Aviation English programs. These were designed as a suggested guide to curriculum development. However, assessment of radiotelephony communications should not be limited to only these topics.

- *Proficient speakers must apply suitable communicative strategies in order to exchange messages/ ideas and to recognize and solve misinterpretations. For instance, check, confirm, or clarify information in a general or work-related environment*. Aviation English experts have recognized that communicative competences are an important part of language proficiency. The ability to identify and solve potential errors in communication is an important aspect of communicative competences. Rephrasing or paraphrasing a message is also a mandatory ability within the context of Aviation, due to the fact that sometimes the phraseology "Say again" could be understood as a request for clarification rather than repetition.
- *Proficient speakers must handle easily the linguistic challenges caused by a complication or unexpected turn of events which may take place during a routine work situation*. A relevant aspect in all type of communications, particularly those that include the use of second languages, is when the unexpected happens. Human Factors experts have highlighted the risk of losing self-control in emergencies (ICAO, 2010). Communication breakdowns must be avoided to guarantee safety while flying. It is important for air traffic controllers and flight crews to have enough ability to use language for communicational purposes during unexpected events. This holistic descriptor stresses the necessity of language skills practiced and demonstrated in this context.

- *Proficient speakers must speak English that is comprehensible to the aeronautical community*. This holistic descriptor refers to the accents of native and nonnative speakers of Aviation English. The ICAO (2010) considers that this issue has been appropriately handled by native-speaker controller populations. Air traffic control and trainees must demonstrate that strong accents would not interfere in Aviation communication, for this reason, this aspect must be corrected with additional elocution or speech training.

Trainers' position in the process of Aviation English training

The Aviation English training programs need to count with a high degree of commitment which would benefit learners (ICAO, 2010). An effective communicative use of the language in order to acquire the lexicon needed to perform flight operations is relevant to reach the objectives of Aviation

English training. Trainers must pay attention to encourage students to complete the tasks assigned during the course. Once again, on its manual, the ICAO, (2010) suggests that in case of not having the time to develop all the tasks needed to practice the application of language to reach the desired level, Computer Assisted Language Learning (CALL) activities may be included in the program.

According to Wang (2011) the inclusion of appropriate tasks will help the learner to develop the functions of the language in situational contexts not only in oral activities but also in written work, as well as in the development of comprehension skills.

The fact of selecting suitable methodology for Aviation English programs would enable students to be much more motivated and build self-confidence to improve speaking and interaction skills.

Motivation in the process of Aviation English programs

The ICAO (2009) states that trainers must find the opportunities to expand on questions, topics, and situations that may appear during instruction. Educators have to

demonstrate learners that there is a reason for each activity during training and that all tasks are related to professional functions of the language in Aviation.

Lesson plans in the process of Aviation English training must be flexible guidance tools (Dusenbury & Bjerke, 2013). Teachers should be able to improvise and spend more time on the topics that require more attention or in which the students show a particular interest. Nevertheless, trainers who are not Aviation experts may carry out research in order to find information, which can be provided to learners to answer possible technical issues during instruction.

Grammatical accuracy and native-speaker pronunciation in Aviation English.

Communicational effectiveness is the goal of any Aviation English training program, and that is why ESP teachers must not base learning on grammatical rules or native speakers' pronunciation (ICAO, 2010). However, educators must be able to differentiate it from structural errors, which affect meaning and may be the cause of miscommunication.

The ICAO (2009), on its guidelines for training programs establishes that Aviation English is expected to be a language that can be easily understood by all the members of the Aviation community. Pronunciation is a fundamental skill in Aviation English that must be developed in order to be understood by native and non-native speakers (Anderson, 2008).

Communicative approach in Aviation English programs

According to the ICAO (2010), the Communicative Language Teaching approach is the key criterion by which any aviation English training should be assessed. Radiotelephony communication has to be effective, clear and unambiguous because safety is the most important aspect listed in the objectives of the ICAO Language Proficiency Requirements.

In the context of general English teaching, the instructor develops the four skills; however, in the ESP course of Aviation English students are required to be active and interactive in order to develop the six skills evaluated by the ICAO.

Specific operational objectives and functions of Aviation.

According to the ICAO (2010), Aviation English teachers should have a familiarization period with the operational environment of aviation in order to understand terminology applied to:

- Airspace management,
- Airport ground movements,
- Flight deck exchanges,
- Routine and abnormal situations,
- Information exchange

The ICAO (2010) considers that for a better teaching environment, trainers must experience real life situations in order to understand and appreciate the application of Aviation English in flight operations by not only Pilots but also flight crew and Air Traffic Controllers. The organization also explains that teaching should also include terminology in especial flying situations like:

- Effects of icing conditions,
- Wake turbulence,
- Displaced runway threshold,
- Extended holding,
- A missing passenger,
- Two similar call signs,
- Altimeter settings in hector Pascals or inches of mercury,
- A sick cabin attendant,
- Noise abatement procedures or the onset of rain during taxiing.

The ICAO (2010) defines the operational functions of radiotelephony, which are mandatory to be included in Aviation English Programs. These are:

- Orders;
- Requests;
- Offers to act or advice;
- Sharing information about past, present and future events;
- Expressing necessity, feasibility and capacity.

The ICAO (2010) explains that for routine situations, the standard phraseology manual is the formal document used in Aviation for requesting information while flying. However, in non-routine, unusual or abnormal situations, there is the need of using plain language to explain, rewording or offer extra information. One example of these type of situations may be to describe a failure related to the system, a passenger's state of health or an obstacle on the runway. The fact that the trainer becomes familiar with these events would enable learners to handle the necessary communication tools needed in Aviation.

Distinction between standardized phraseology and plain language

The ICAO (2010) establishes standardized phraseology and plain language for radiotelephony communications; nevertheless, the organization emphasizes the need of including all possible resources to develop the skills required for Aviation purposes. The ICAO standardized phraseology is the list of messages that are commonly needed to perform flight operations and it is described by the ICAO (2010) as "a set of clear, concise, internationally recognized, formulaic messages designed for use in most routine situations and the most commonly encountered emergencies" (p. 66).

Wang (2007) states that the phraseology manual developed by the ICAO was carefully designed by aviation experts in order to set a unified criterion of operational meaning. On the other hand, common or plain language varies depending on socio cultural aspects. The ICAO (2010) claims that the phraseology manual includes most of the situations transmitted in

radiotelephony communications and that it can be considered as the most suitable tool for operational purposes.

Alderson (2008) states that Aviation English training programs, must carefully design tasks to study the use of the ICAO's phraseology manual. The fact of wrong interpretation would cause a negative impact on Aviation safety. It is also true that standardized phraseology cannot include the non-routine, abnormal or, occasional emergencies that may take place while flying. Plain language is mostly used for providing additional information related to situations like:

- Reasons for a delay,
- The state of a sick passenger,
- The weather situation,
- The nature of a failure,
- Or an obstacle on a taxiway.

Aviation English aspects in abnormal situations

The ICAO (2010) cites two examples of plain language that led to miscommunication and became contributing factors in two deadly aircraft accidents. The samples are:

- "We are at take-off." (KL 4805, Tenerife 1977)

  The problem of this statement is the lack of vocabulary that caused ambiguity on the message delivered to Air Traffic Controllers.

- "We are running out of fuel." (Avianca 052, New York 1990)

  This statement involved in the inability to paraphrase information or make it more explicit for Air Traffic Controllers to find a possible solution.

The ICAO (2010) describes that the role of Aviation English for Air Traffic Controllers as well as Pilots is crucial for safety issues. Before the implementation of the first edition of the Language Proficiency Requirements in 2004, the ICAO carried out some

research that showed human errors to be the main cause of fatal incidents in Aviation. Wang (2011) states that in the context of Aviation English teaching, trainers need to develop awareness of miscommunication while flying can cause more stress in critical conditions where voice-only communication is the only means of conveying information.

Wang (2011) also claims that safety issues are the main reason of why Aviation English trainers must monitor students' speech production. The Aviation community includes members who have different cultural backgrounds, which can also be a factor that influences misinterpretation. It is the Aviation English trainer's responsibility to recognize situations linked to cultural aspects in order to have a class discussion and clarify terminology with students.

Aviation English training classroom management techniques according to the ICAO.

The ICAO (2010) establishes that trainers must possess the ability to organize and supervise group and pair activities that stimulates communication within the participants of the course and keep learners alert and interested. For this reason, it is mandatory to select tasks focused not only on content, but also on speech production. In order to reach effective communication goals, the trainer must allow interaction among students, monitoring and supporting them in the process of tasks completion.

Call for Aviation English Training according to the ICAO

The official organization in charge of the determining the requirements for any aviation English training program is the International Civil Aviation Organization (ICAO). According to the ICAO's manual related to Language Proficiency Requirements (2010), Computer-assisted language learning (CALL) enables Aviation English training programs to practice the skills needed to perform flight operations. The importance of computers in language acquisition is increasing due to their benefits, including the following:

- The access to updated websites that offer a variety of specialized material in text, audio and video form.
- Extra material for autonomous practice in specific areas of the language.
- Access to specialized or general English courses.
- Interactive tools such as chat rooms, forums, games or flight simulators.
- Internet access to investigate more information about linguistic elements found (online dictionaries) or on topics and themes being treated;
- Access to platforms for completion of tasks related to Aviation English
- Management of records related to learning performance and progress.
- Having immediate feedback on certain aspects of language proficiency such as pronunciation and fluency.

The ICAO also highlights the importance of computers as supporting tools during the training process; nevertheless, this organization clarifies that any technological device could replace the role educators have in language learning. Computers are part of the instruments used for interaction among learners and instructors providing learners with the opportunity of practicing the language on their own. On the other hand, speaking as well as listening skills must be primarily developed in face-to-face sessions, particularly in the context of plain-language radiotelephony communications (ICAO, 2010).

The ICAO, on its manual for language proficiency (2010) stipulates that training programs must motivate learners to be independent and autonomous, especially in tasks that require further research. Some of the advantages of applying CALL in Aviation English training are:

- Length reduction of face-to-face instruction
- The relationship between cost and teaching and learning effectiveness
- Independent, responsible and motivated learners

Blended learning according to ICAO guidelines for Language Proficiency Programs

The ICAO considers blended learning to optimize the time in face-to-face sessions (ICAO, 2009). This organization considers that instructors of Aviation English training programs must spend classroom time on communicative tasks and interaction skills that are at the heart of the ICAO language requirements.

Learners can use CBT or WBT activities to activate prior knowledge in order to avoid unnecessary repetitions of lengthy information within classroom time. According Sharma & Barrett (as cited in ICAO, 2010) the implementation of CBT and WBT is effective for remedial training in case of having difficulties in classroom sessions. Training designers must explain how blended learning is beneficial for the learning process.

Computer-based training (CBT) or web-based training (WBT) for Aviation English Programs

According to the ICAO (2010) CBT and WBT resources, represent a relevant source of useful and cost-effective learning tasks. This type of activities contributes to the development of skills such as listening or reading, and they allow learners to increase vocabulary and practice grammatical structures related to aviation. With the implementation of CBT or WBT tasks, classroom time is mostly spent in speaking exercises that are needed to improve speech production, fluency and interactive skills.

The materials used for Aviation English training must be as real as possible, especially audios and videos, due to the fact that listening comprehension and vocabulary are essential in the process of learning. CBT and WBT resources expose students to authentic material, which is mandatory to progress towards proficiency (ICAO, 2010).

Expected teachers and students' roles for online instruction

According the website Edgenuity (2016) for online instruction, students will need self-motivation, time-management, and communication skills in order to do well in an online or blended learning programs.

Additionally, Edgenuity proposes a vision of the teacher work that matches with the online instruction:

- Mentor and motivate students to encourage active learning, application, interaction, participation, and collaboration.
- Promote clear students' expectations through prompt responses, and regular feedback.
- Maintain communication via e-mail, phone, etc. to promote regular feedback.
- Respond to students with special needs or different learning styles.
- Understand and use a range of technologies that effectively support student learning and communication.
- Reflect on personal practice.

Chapter III

Methodology and Results

The purpose of this research is to analyze how the ESP methodology applied in the module of Aviation English at ESMA might be affecting the performance of the cadets during flight operations since the research question states: How does the Methodology of an English for Specific Purposes Aviation course influence the acquisition of an appropriate lexicon for flight operations at Escuela Superior Militar de Aviación “Cosme Renella Barbatto” (ESMA) in Salinas?

Research Method

The method selected for this investigation is action research, which according to Wallace (2006) is aimed at finding solutions to problems derived from the methodology, the context, the students or any other educational agent. It allows the investigator to get information from the learners’ performance and determine whether it is effective or not. Taking this into account, the present study, apart from analyzing how the current ESP methodology may be affecting the process of learning Aviation English, it also aims to propose a solution if it is found that the methodology is the problematic field.

Action Research also focuses on implementing solutions to boost educational practices (Wallace, 2006). This method is suitable for this investigation since it permits the researchers to obtain reliable information from a specific educational scenery, which in this case involves not only the cadets, but also the Flight instructor, who are the target participants in the ESP module.

In order to answer the research question, the analysis of the methodology applied in the ESP module will be based on quantitative and qualitative data. This means that a mixed method approach for data analysis will be applied, which according to Cresswell (2013) “provides a stronger understanding of the problem” (p.264) and “It involves the collection of

both qualitative (open-ended) and quantitative (closed-ended) data in response to research questions or hypotheses and it includes the analysis of both forms of data" (p.266).

Participants

This study involves the flight instructor assigned for the module of Aviation English by the ESMA. It is important to remark that all the Ecuadorian Air Force Officers have a bachelor's degree in Aeronautical Sciences, and most of them have teaching experience in military subjects. It is not required to demonstrate the level of English that they possess, though.

On the other hand, this study will also consider 15 pilot cadets of first year; there is only 1 female learner and 14 male cadets aged from 18 to 20, and most of them come from different regions of the country.

Data gathering instruments and procedure

The design for this research is a mixed method approach, so there are quantitative and qualitative instruments. In order to collect quantitative data: (1) a mock Aviation Test and (2) a survey was administered to the cadets. As for qualitative data, (3) an adapted semi-structured interview was applied to the instructor.

The tests were scored in order to determine the level of Aviation English the cadets have after finishing the module at ESMA. ICAO's rating scale was applied to present the results on a table. This instrument is based on the practice test available on Oxford's official website for the book "Oxford Express Series: English for Aviation for Pilots and Air Traffic Controllers" (2008).

As for the results of the survey conducted, these characterized the cadets' perceptions regarding teaching techniques used by the instructor during the ESP module. This instrument is based on: the questionnaire of the work of Samira Atefi Boroujeni and Fateme Moradian (2013), which consisted on analyzing the application of communicative language teaching

within the context of several Iranian universities. The questions from this questionnaire were adapted to the context of Aviation English based on the language proficiency requirements established by the ICAO (2010).

On the other hand, qualitative information was also necessary in order to identify the perception of the instructor regarding aspects such as: teaching methodology, organization of the syllabus, assessment of the ESP module, and the importance of Aviation English for Military pilots. Therefore, an interview related to these topics was carried out to analyze aspects that are essential in the process of acquiring knowledge. This instrument was based on the questionnaire administered to English Language Teachers in the Department of Computer Science at the University Mentouri Constantine, located in Algeria. This tool was applied by Farida Rosa Dakhmouche (2008) for analyzing ESP teaching methodology in the field of Computer Science. The questions considered as irrelevant for this study were excluded from the interview, these are:

- *Question 2: What is your status as a teacher:*
- *Question 6: Please note below your timetable for the teaching of English.*
- *Question 8: Is students' attendance to the English classes compulsory?*
- *Question 8: How do the English classes take place?*
- *Question 9: When you translate English into another language, what are the aspects you tend to concentrate on?*
- *Question 15: Your experience in English language teaching at the computer science department has: (a) Changed your opinion about the other departments, (b) Enabled you to acquire a knowledge of computer science.*

Procedures

The first step in the process of data collection was to send a formal letter to the Officer in charge of the Academic Department to ask permission for applying the test and the survey

to the 15 cadets of first year as well as to interview the Flight Instructor in charge of the Aviation English module. It is important to mention that this course takes place inside the hangars, which are restricted areas that can only be accessed by military personnel. For this reason, class observations and documents like grade reports of previous courses were not possible to be included as part of the data collection.

The place assigned for the cadets of first year to take the test and survey was the English Laboratory. They were under the supervision of the researchers who explained the instructions of the test as well as the parameters and specifications of the survey. As for the interview, the Flight Instructor answered all the questions and explained the process of teaching Aviation English at ESMA.

Analysis of data

The first instrument that was applied to collect quantitative data was the mock Aviation English test. It was used to determine the level of Aviation English that cadets have after passing the course at ESMA. It is divided into five sections: Fluency, Comprehension, Interactions, Structure, and Vocabulary.

- The Fluency section presents 12 questions related to picture descriptions.
- The Comprehension section uses real life audios to test listening comprehension skills in eight questions.
- The Interactions, Structure, and Vocabulary sections consist of multiple-choice questions to test these skills, 10 questions per area are presented.

There are fifty questions on the test; therefore, it was doubled the score to calculate the results in terms of percentage in relation to the Extended level 5 that the ICAO details on the rating scale for Aviation English proficiency. In table 1, it is explained how the test was graded:

Table 1
Grading Scale of the Aviation English Mock Test

Number of correct questions	Percentage	Level of Aviation English
45 to 50	90 - 100%	Extended Level 5
35 to 44	70 - 89%	Operational Level 4
25 to 34	50 - 69%	Pre-operational Level 3
15 to 24	30 - 49%	Elementary Level 2
0 to 14	0 - 29%	Pre-elementary Level 1

Table 2
Results of the Aviation English Mock Test

Cadets	Fluency 12 marks	Comprehension 8 marks	Interactions 10 marks	Structure 10 marks	Vocabulary 10 marks	Total Correct Questions	Percentage	Level of Aviation English
Participant 1	6	5	5	8	7	31	62%	Pre-operational Level 3
Participant 2	10	6	6	7	8	37	74%	Operational Level 4
Participant 3	6	6	6	5	4	27	54%	Pre-operational Level 3
Participant 4	5	6	6	6	7	30	60%	Pre-operational Level 3
Participant 5	7	6	6	5	7	31	62%	Pre-operational Level 3
Participant 6	6	6	7	6	7	32	64%	Pre-operational Level 3
Participant 7	3	4	4	7	4	22	44%	Elementary Level 2
Participant 8	5	7	6	8	7	33	66%	Pre-operational Level 3
Participant 9	9	6	6	5	7	33	66%	Pre-operational Level 3
Participant 10	6	5	7	7	7	32	64%	Pre-operational Level 3
Participant 11	8	5	5	5	6	29	58%	Pre-operational Level 3
Participant 12	6	5	5	6	7	29	58%	Pre-operational Level 3
Participant 13	5	6	6	7	7	31	62%	Pre-operational Level 3
Participant 14	6	8	6	6	7	33	66%	Pre-operational Level 3
Participant 15	8	6	6	6	7	33	66%	Pre-operational Level 3

Table 2-above- shows that the level of Aviation English of first year cadets at ESMA, is below the minimum requirements established by the ICAO on its manual for language proficiency.

In the coming paragraphs, a detailed analysis and interpretation of the survey results will be shown.

Question 1: Does the module of Aviation English at ESMA fulfills the needs of a Pilot?

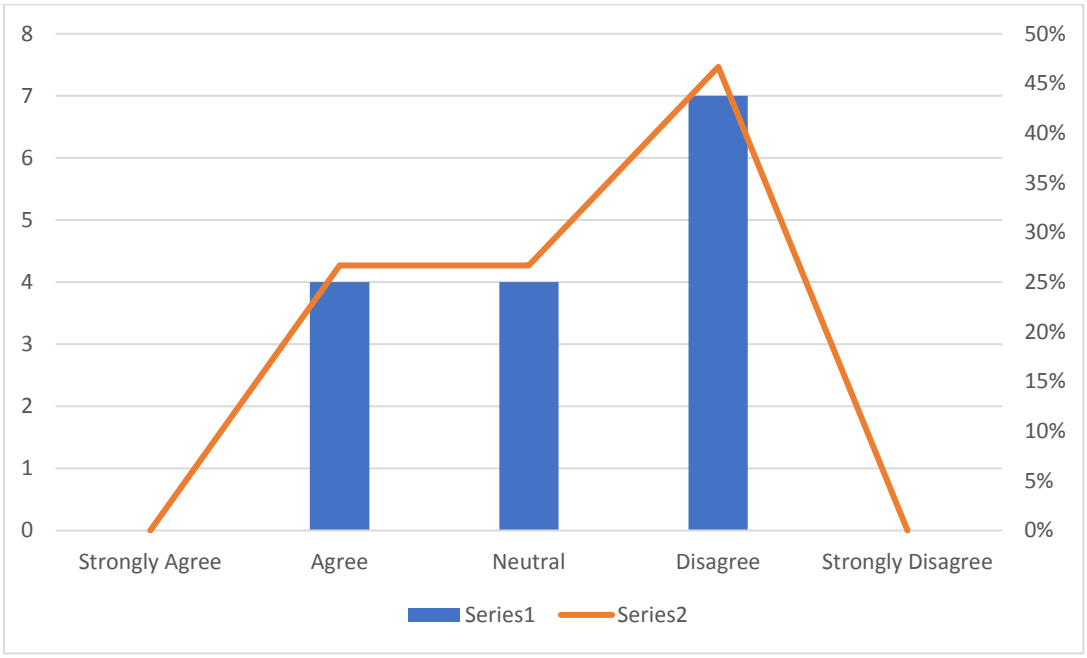

Figure 4. The module of Aviation English at ESMA fulfills the needs of a Pilot

Figure 4 depicts forty-seven percent (47%) of the cadets, which is nearly half of the entire population, who believe that the Aviation English module they are currently studying does not fulfill their needs, i.e. the course may need to be improved. Thirteen percent (13%) of the learners agree that they are satisfied with the module. Another thirteen percent (13%) remained neutral in their answers.

Question two: *Do you know what ICAO is, and which are its functions in Aviation?*

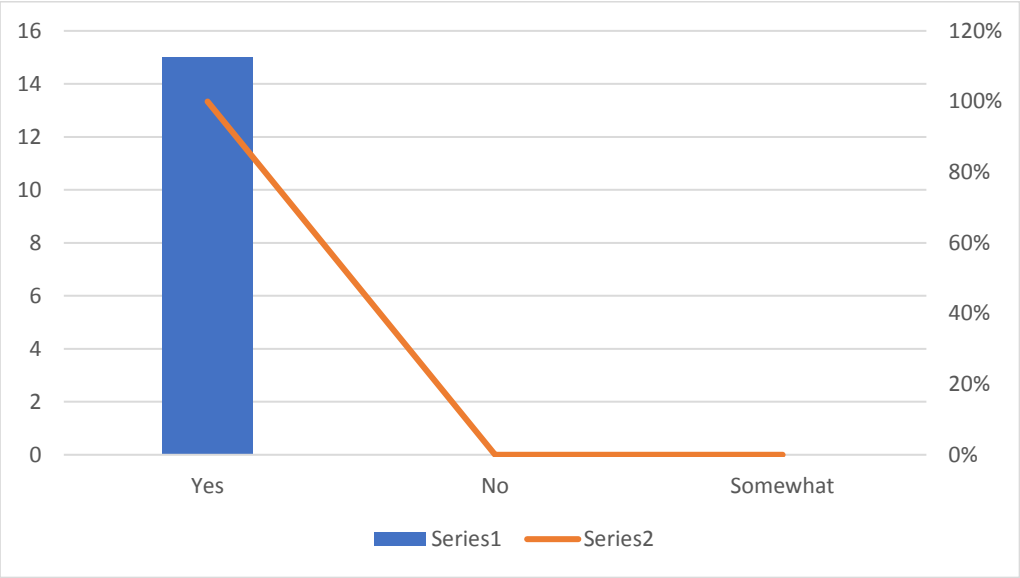

Figure 5. The functions of the ICAO in Aviation

Figure 5 demonstrates the cadets' knowledge about the definition of ICAO and its functions. All of the interviewees have shown to know the topic since 100% did agree to know what ICAO is and which its functions are.

Question 3: *Are you familiar with the Manual on the Implementation of ICAO Language Proficiency Requirements?*

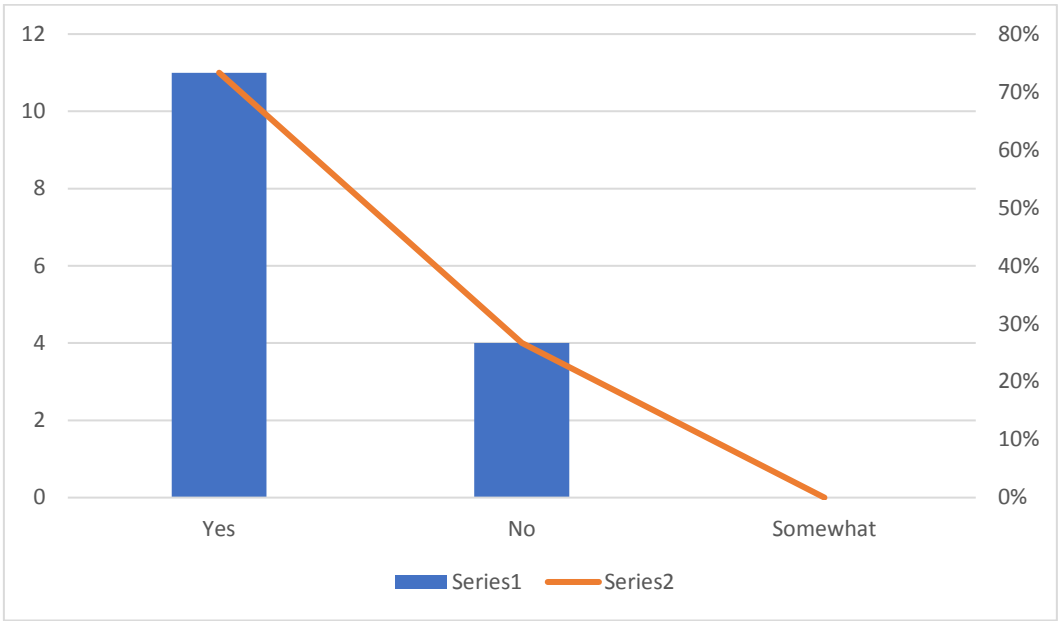

Figure 6. Familiarity with the ICAO´s Manual of Language Proficiency Requirements

Figure 6 illustrates that seventy-three percent (73%) of the pilots to be, are familiarized with the Manual on the Implementation of ICAO Language Requirements, whilst twenty-seven percent (27%) alleged not to know neither ICAO's manual nor the language proficiency requirements.

Question 4: *The content of the module of Aviation English at ESMA is similar to the one mentioned in the ICAO's manual of Language Requirements*

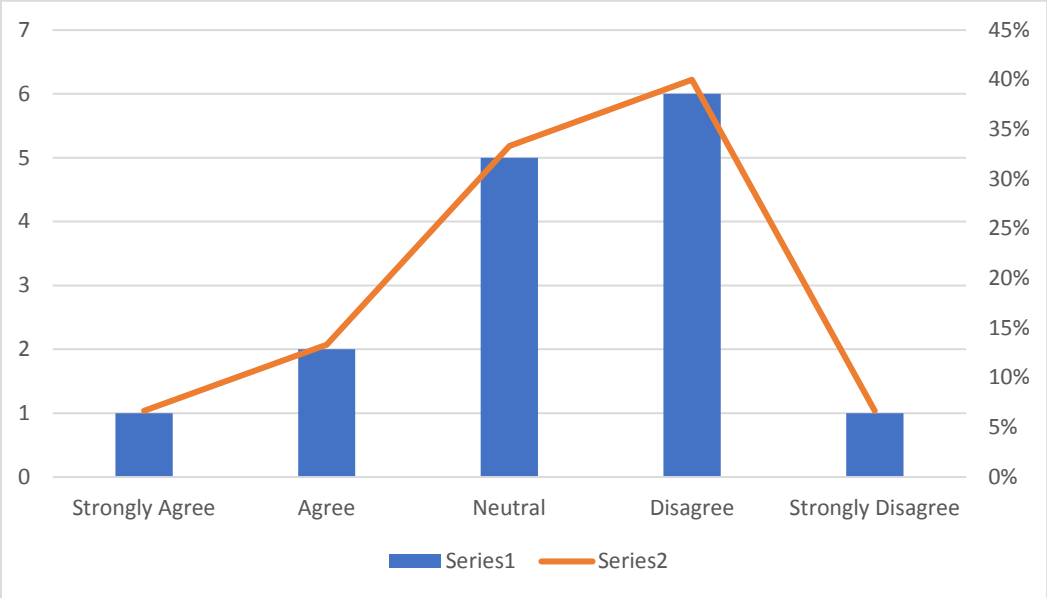

Figure 7. Comparison of the content of the module of Aviation English at ESMA with The ICAO's manual of Language Requirements

The chart above shows the perspectives students have towards the content they are actually receiving, and the content the ICAO's manual proposes.

According to figure 7, a major percentage of the cadets, forty percent (40%) disagree that the content used in their current module is aligned with that from ICAO's manual. Thirty-three percent (33%) of the cadets preferred not to comment on this question, it can be assumed that they do not know what the contents of the ICAO's manual are, hence they could not make any comparison. On the other hand, thirteen percent (13%) of the students answered that they think both sources share similar contents. Interestingly, one percent (1%) of the pupils was completely sure that both contents are alike. Similarly, one percent (1%) of the interviewees totally disagree that the both contents are alike.

Question 5*: Are you familiar with the ICAO Rating Scale for Language Proficiency in Aviation?*

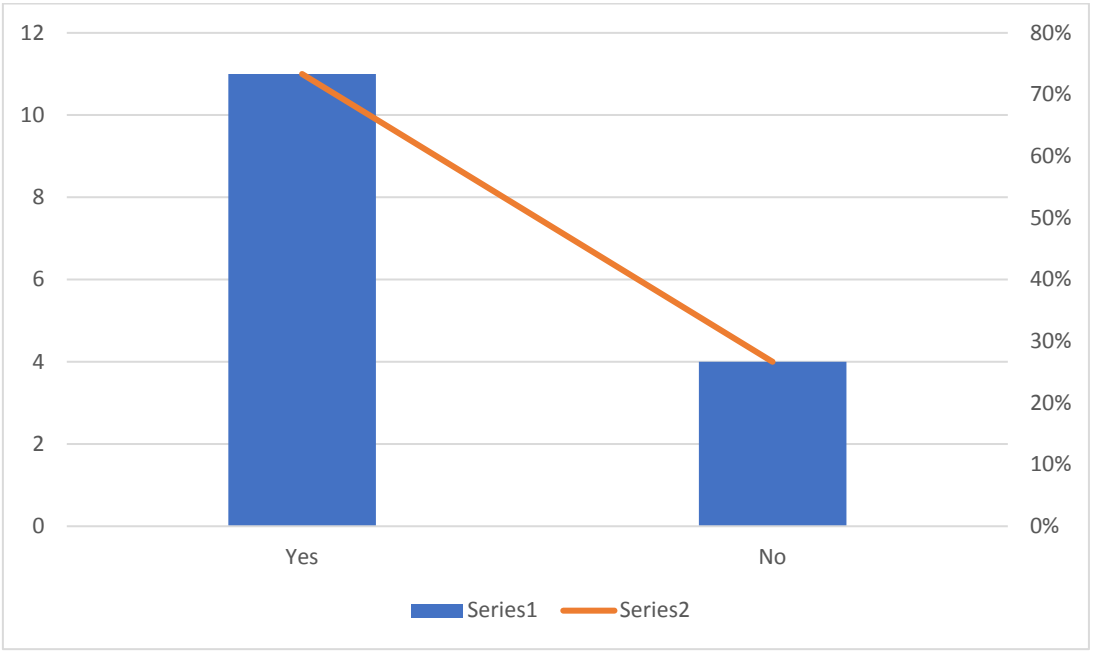

Figure 8. Familiarity with the ICAO Rating Scale for Language Proficiency in Aviation

Figure 8 illustrates how many students know about the Rating Scale for Language Proficiency ICAO has created. The results are reassuring since seventy-three percent (73%) say they know the rating scale proposed by ICAO. However, there is a twenty-seven percent (27%) of the interviewees who do not know it.

Question 6*: Do you know what the Operational Level 4 established by the ICAO is?*

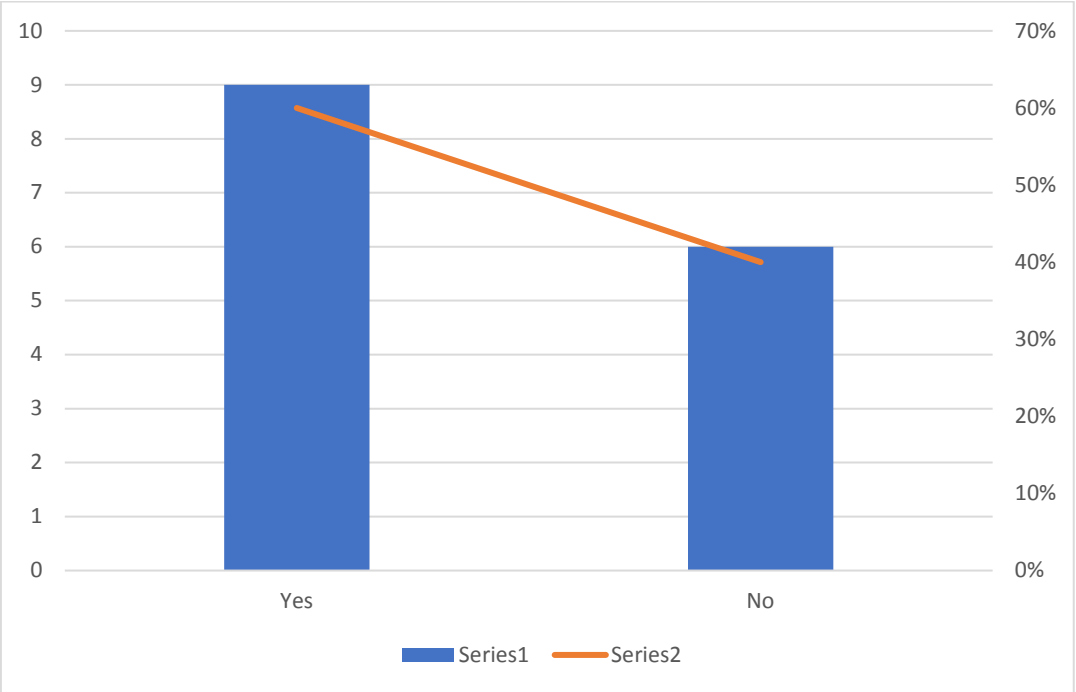

Figure 9. Awareness of Operational Level 4 established by the ICAO

Figure 9 shows the percentage of the interviewees who know what the Operational Level 4 established by the ICAO is. Fortunately, sixty percent (60%) of them are aware of the importance of obtaining the Operational Level 4. Nonetheless, forty percent (40%) of the pupils are not familiarized with these parameters.

Question 7: *Do the learning activities of the Module of Aviation English include real life scenarios?*

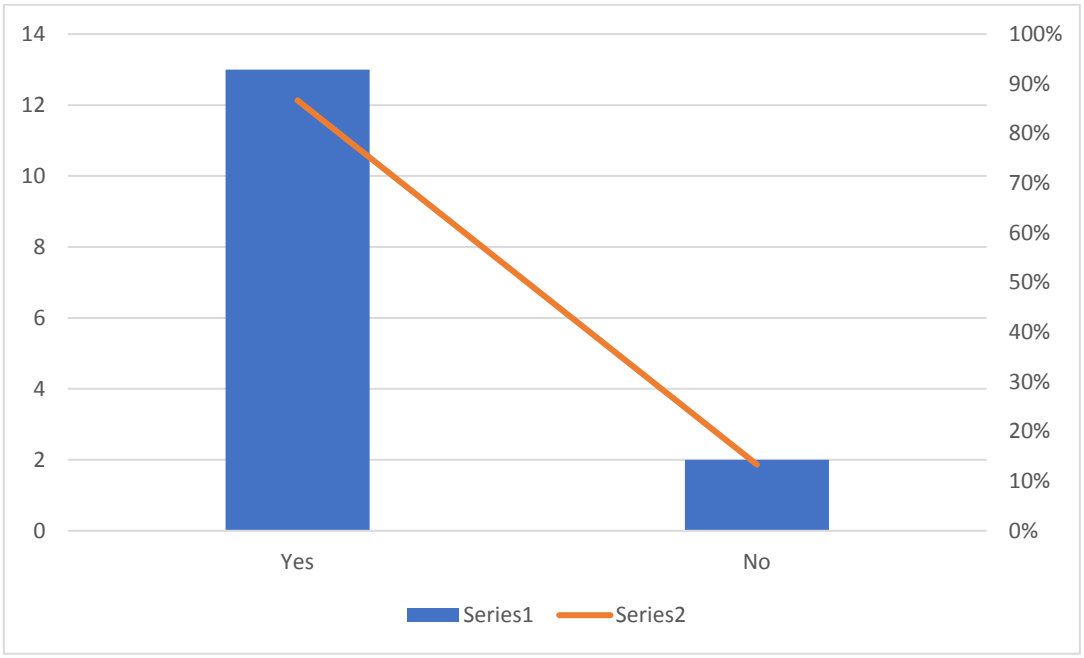

Figure 10. Inclusion of real life scenarios in the module of Aviation English

Figure 10 shows whether the learning activities given in the Aviation English module include real life scenarios or not. Eighty-seven percent (87%) of the students agree that the module of aviation includes real life-scenarios the. Yet, thirteen percent (13%) expressed that the contents taught in the Aviation English module are not.

Question 8: *Do the activities in the module of Aviation English help you understand the use of technical vocabulary for flight operations?*

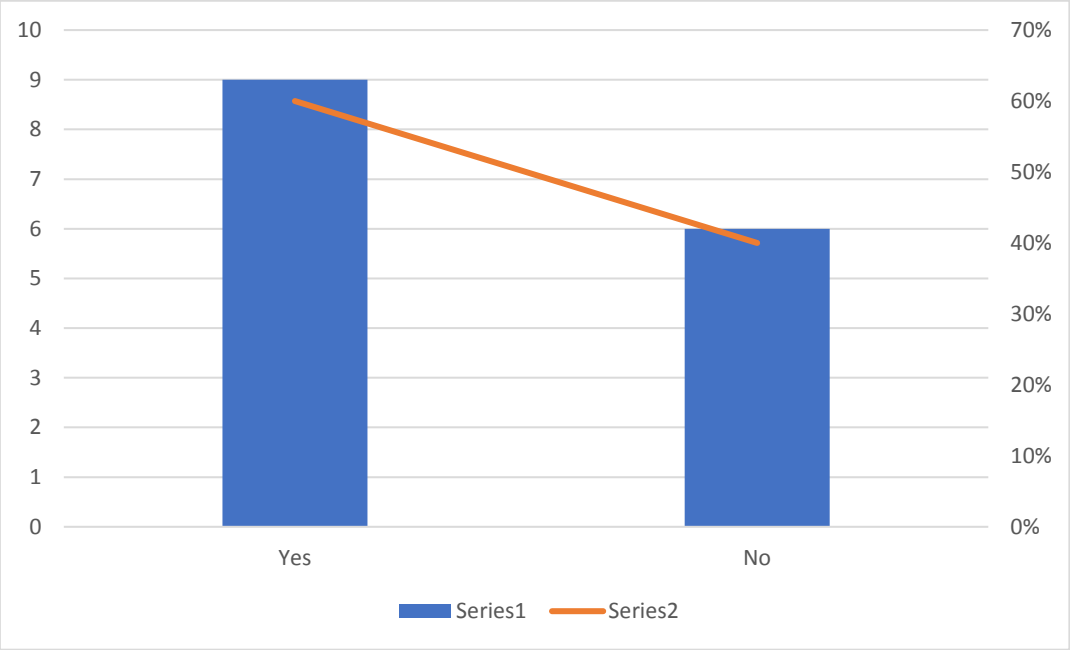

Figure 11. Inclusion of technical vocabulary for flight operations during the Aviation English Module

Figure 11 demonstrates students' beliefs about whether the activities in the module of Aviation English serve as facilitating tools to learn the use of technical vocabulary for flight operations. The majority of people who participated in this study, sixty percent (60%) stated that the activities of the module of Aviation English have been of great help to understand the use of technical vocabulary. Forty percent (40) considers that the tasks do not contribute to the use of technical vocabulary for flight operations.

Question 9*: Does the module of Aviation English include tasks that improve fluency for radiotelephony operations?*

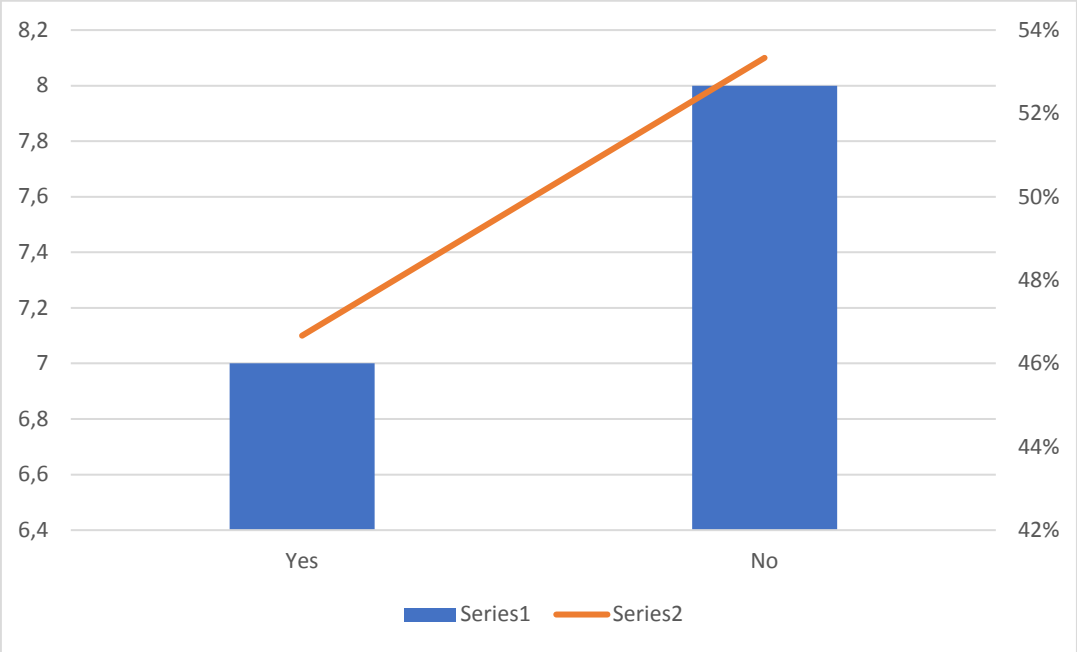

Figure 12. Inclusion of tasks that improve fluency for radiotelephony operations

Fluency is one of the aspects included in the levels of ICAO Rating Scale for Language Proficiency in Aviation. Therefore, it is necessary to reinforce it with activities within the aviation context in order to improve it. This graph shows forty-seven percent (47%) of the population that expresses that the fluency for radiotelephony operations is practiced and studied through tasks, which are included in the module of Aviation English. However, there is a fifty-three percent (53%) of the participants that does not believe that they have performed tasks that enhance their fluency for radiotelephony operations during this module.

Question 10: *The evaluations of the module of Aviation English include communicative strategies to exchange messages and to recognize and resolve misinterpretations in aviation.*

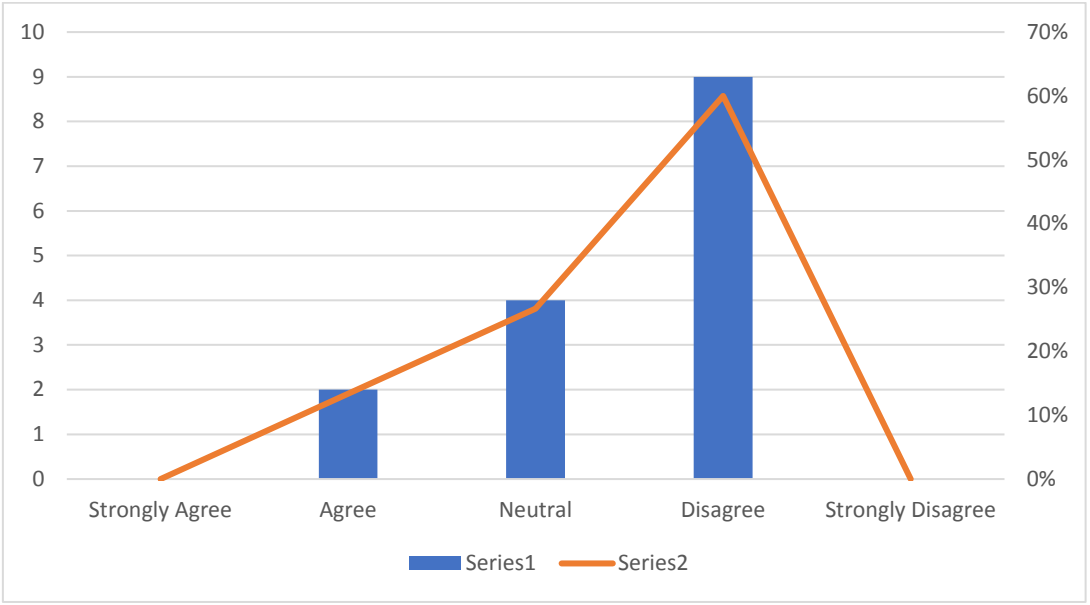

Figure 13. Assessment of the Aviation English Module at ESMA

Figure 13 illustrates people's acceptance of the idea that the evaluations of the module of Aviation English include communicative strategies. Sixty percent (60%) of the participants does not agree with saying that they have received strategies to exchange messages/ ideas and to recognize and solve misunderstandings in aviation. Twenty-seven percent (27%) of the same group declared themselves neutral before the question, so it can be inferred that their understanding of the communicative strategies is not sufficient to give a negative or positive response to the issue. In parallel with the last one, thirteen percent (13%) expressed that they have received the necessary strategies to perform adequately in the aviation field.

Figure 11*: The tasks performed on the computer are useful in the process of acquiring the lexicon needed for flight operations*

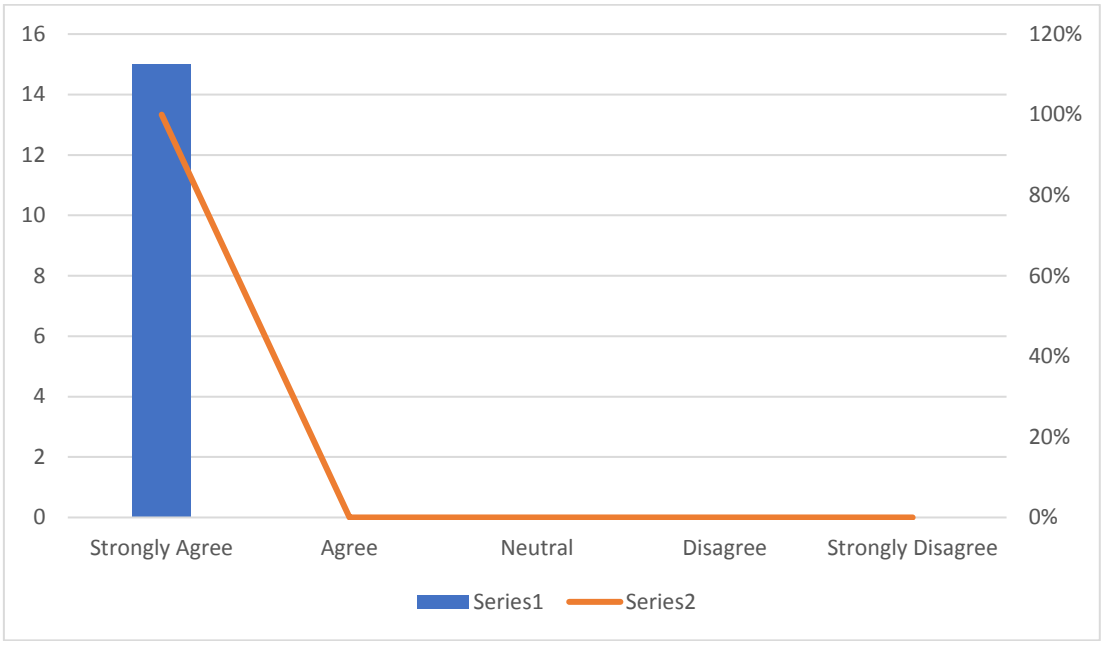

Figure 14. Inclusion of tasks that improve fluency for radiotelephony operations

Figure 14 shows the impact of tasks performed in computers when acquiring and developing the lexicon required for flight operations. One hundred percent (100%) agree with the usefulness of computerized activities when it comes to the acquisition of an appropriate lexicon in the field of aviation.

Interview to the Flight Instructor

The interview took place at ESMA's Academic Department, the military instructor in charge of the last module of Aviation English kindly answered all the questions and also gave his opinion regarding the need of having Pilots able to reach the Operational English level established by the ICAO.

The instructor explained that he has a Bachelor's degree in Aeronautical Sciences, in addition, it was mentioned that he was chosen to teach this subject because he took some courses to pass the ICAO examination. He also explained that even though he is part of the Academic and Flight Department, as a Military Officer, he also has to cooperate in some other activities at the school.

The instructor said that he has teaching experience in military subjects like: Military Mapping, Military Symbology and Internal Defense. However, he does not have any qualifications related to teaching general English. The main teaching strategies applied in the Aviation English course at ESMA were based on drills and grammar translation. The resources in the last module were: the ICAO phraseology manual and the manual of an aircraft.

The instructor emphasized that ICTs represent one of the most important tools that teachers have nowadays, especially in the aviation world. He made clear that a few online activities were assigned during the module, but, not all of them were appropriate. Based on his personal experience of attending an Aviation English course, the instructor considers computer-based tasks are the best choice for this kind of courses.

Results

The results of the mock test of Aviation English provide strong evidence that the level that cadets obtain at the end of the ESP course at ESMA does not reach the minimum requirements established by the ICAO on its manual for language proficiency -Operational 4-.

Five out six language skills were tested in order to analyze the knowledge acquired during the ESP course taught at ESMA. The results of each skill reveal that there are some aspects regarding instruction that have to be reviewed to provide cadets with enough practice on specific terminology that could help them improve their learning on those areas.

The results of the students' survey indicate that there are some aspects of the Aviation English module that need to be improved due to the fact that most of the participants believe that this course does not fulfill their needs as future Pilots. This can be caused by different factors, among them, the lack of an appropriate methodology for foreign language teaching.

The first-year cadets are aware of the role that the ICAO plays in the Aviation context; however, not all of them are familiarized with ICAO's Language Requirements, which means that among the topics listed in the Aviation English module, a presentation of this relevant tool in the world of Aviation must be included. Moreover, the skills which are evaluated in the ICAO's Rating Scale of Language Proficiency as well as the levels established by the ICAO for Aviation English must be analyzed.

Tasks to develop fluency are considered as another aspect that needs to be enhanced in order to understand radiotelephony operations. This includes communicative tasks implemented in the module in which pilots must be able to exchange messages, recognize and resolve misunderstandings while flying, fulfill the cadets' expectations since the current speaking tasks do not.

The methodology and contents of the Aviation English module must be revised and compared to the guidelines given by the ICAO for Language Proficiency. According to the participants of the course, computer-based activities represent a useful resource for the acquisition of an appropriate lexicon in the field of aviation.

The instructor of the subject does not have a degree in English teaching. However, his personal experience when taking private Aviation English courses has allowed him to guide

the cadets during this module. Plus, he has been assigned to teach military subjects; therefore, he realizes the impact of methodology in the field of education.

The contents of the Aviation English module are selected by the instructor who is in charge and there is no specific teaching methodology; nevertheless, he considers that drills as well as grammar translation are the main techniques applied in class. The resources of the module are: the ICAO phraseology manual and the manual of Ecuadorian Air Force flight manuals.

The instructor strongly believes that ICTs tools are the best option for this type of courses; in fact, he uses some online activities to complement some topics but some of them do not adapt to the cadets needs.

Conclusions

The results of this research indicate that there are some aspects regarding the Methodology of the Aviation English module taught at ESMA that must be revised in order to be improved; even though Alderson (2008) states that Aviation English courses have their own methodology, teaching strategies must be carefully reviewed in order to develop the skills that pilots must possess for communicational purposes while flying.

The participants of this research are aware of the ICAO's importance in the Aviation field worldwide. Yet, not all of them are familiarized with the ICAO's Language Proficiency Requirements manual. In this regard, on the second edition of this manual (2010) it is specified that any valid Aviation English training must be designed with specific tasks which allow learners to address the six language skill areas that can be found in the ICAO Rating Scale which are: pronunciation, structure, vocabulary, fluency, comprehension and interactions. Therefore, the instructor of the Aviation English module at ESMA must fully understand the guidelines established on this manual when selecting the methodology, content and tasks presented on the course.

This document also stipulates that the training must also guarantee that students achieve proficiency in all six skill areas of the ICAO Operational Level 4 (ICAO, 2010). In spite of this fact, some participants do not consider that the activities developed in the course would prepare them to reach this level, especially because the tasks to develop fluency within the aviation context need to be improved to understand radiotelephony operations. Radiotelephony conversations are interpreted as the communication among pilots and air traffic controllers; these include exchanging of messages, recognition of misunderstandings as well as solving problems while flying (Wang A. , 2007).

According to Wang (2007) Aviation English embraces (but must not be limited to) the phraseology manual established by the International Civil Aviation Organization (ICAO) as well as “plain language”, which is also known as general English. Therefore, it is necessary that the instructors who are in charge of this module must possess not only expertise in flying an aircraft, but also in English teaching due to the fact that the role of the teacher in Aviation English courses is essential when combining plain language with the terminology and expressions detailed in the phraseology manual, especially in irregular circumstances as well as emergency situations (Kim & Elder, 2009).

In the guidelines for teaching Aviation English established by the ICAO (2004) it is classified as English for Specific Purposes (ESP) and the communicative approach is the principal teaching methodology; nevertheless, the contents of the Aviation English module at ESMA are selected by the instructor in charge and there is no specific teaching methodology, but drills and grammar translation as the main techniques applied in class. According to Richard and Rogers (2001) in the communicative approach the subject matter to be taught must be developed through the application of communicative strategies which must be added in the module of Aviation English in order to ensure the correct use of technical expressions.

According to the ICAO guidelines for the implementation of Aviation English courses (2009), the course materials are required to be relevant researches and documents supported by the use of visual aids that allow learners to become familiar with aviation topics in order to create meaningful experiences. Nevertheless, the activities developed in the course are mainly based on the two books used by the instructor: phraseology and aircraft manuals. This means that the teacher must include more materials such as: flight simulators, recordings of live traffic online or cockpit voice from authentic incidents.

The results also show the total acceptance of the participants in using tasks performed on the computer in the process of acquiring the lexicon needed for flight operations, and according to the ICAO's guidelines for Aviation English training, the use of Blended Learning for this type of courses can be a more efficient teaching approach since "foundation skills" (structure, vocabulary, listening comprehension and, to a certain degree, pronunciation) can easily be practiced in the autonomous hours of study inside of a lab or computer-based learning environments (ICAO, 2009). Trainers may use classroom sessions to reinforce topics which take more time to be studied.

As stated by Kukovec (2001), communication is challenging because miscommunication errors can easily take place in the aviation environment during flight operations; therefore, the Aviation English module at ESMA must be focused on developing communicational skills to understand and solve all possible situations while flying. For this reason, the module must be revised and adapted to the guidelines provided by the ICAO regarding Language Proficiency.

Recommendations

The methodology of the Aviation English module taught at ESMA must be adapted to an ESP course based on the requirements provided by the ICAO for Language Proficiency in

order to develop the necessary skills that pilots must possess for communicational purposes while flying.

The Aviation English module should incorporate specific tasks which allow learners to address the six language skill areas detailed in the ICAO Rating Scale which are: pronunciation, structure, vocabulary, fluency, comprehension and interactions; and the objective of the course must be reaching the Operational Level 4 established by the ICAO as minimum requirement for flying.

The instructor of the Aviation English module at ESMA must fully understand the ICAO's manual of Language Proficiency due to the fact that the role of the teacher is to guide learners in the process of combining "plain language" or general English with the terminology and expressions detailed in the phraseology manual.

The communicative approach must be the principal teaching methodology in the Aviation English module at ESMA. The materials selected for the course must include relevant researches and documents supported by the use of visual aids such as: flight simulators, recordings of live traffic online or cockpit voice from authentic incidents that allow learners to become familiar with aviation topics in order to create meaningful experiences.

The implementation of Blended Learning in the Aviation English module taught at ESMA may represent a more efficient teaching approach in order to allow the students and teacher to use classroom sessions to reinforce topics which take more time to be studied.

Chapter IV

Proposal

Introduction

According to Hutchinson and Waters (1987), there is no specific methodology for ESP courses; nonetheless, selecting appropriate teaching strategies is part of the success of Aviation English programs. The International Civil Aviation Organization (ICAO) establishes on its language proficiency manual, the Communicative Approach as the main method for developing the six language skill areas one might encounter in the ICAO Rating Scale (pronunciation, structure, vocabulary, fluency, comprehension and interactions). This manual also stipulates that the main goal of Aviation training courses must be to achieve the ICAO's Operational level 4 which is the minimum level of English proficiency required to be an international licensed pilot.

Content-Based Language Training (CBLT) approach is also part of the methodology described on the manual for Aviation language proficiency (ICAO, 2009). The ICAO considers CBLT as an effective method for ESP courses for pilots and air traffic controllers (ATCOs). This organization states that this approach focuses on learning a language based on the content of a specific field. It helps leaners to develop language functions which are directly related to Aviation safety issues as well as the inclusion of high-interest topics which motivate students to acquire the needed lexicon for flight operations. The ICAO lists some of the appropriate classroom activities of an aviation content-based language course, these are: task-based activities, problem-solving, team-building exercises, role play and simulations. Based on the results of this research, neither of the approaches previously explained are included in the module of Aviation English at ESMA; therefore, the methodology of this course needs to be improved in order to reach the objectives established by the ICAO for pilots in terms of language proficiency.

Teaching approaches, strategies and techniques must be adapted to the thirty-two hours assigned to this module. Blended learning is considered by the ICAO as part of the solution when having time constraints in Aviation training programs. For this reason, it is suggested the implementation of:

“Blended learning design for the module of Aviation English at ESMA”

Justification

Blended Learning (BL) is suggested by the ICAO on its language proficiency manual as a suitable teaching approach for Aviation English. For that reason, this proposal presents the design of BL tasks for the Aviation English module at ESMA since the current teaching techniques affect the learning process of the vocabulary needed to perform flight operations such as: briefings, announcements, or flight deck communication.

The main objective of the Aviation English course at ESMA is to fulfill the minimum language requirements established for pilots by the ICAO, and the implementation of Blended Learning would enable instructors to achieve this objective. The possibility of assigning tasks not only for classroom activities, but also for autonomous practices could reinforce all the skills; particularly, those that require more time to be examined such as comprehension, structure or vocabulary. The activities proposed in this work are presented on an online platform; these tasks are related to radiotelephony conversations, the application of ICAO’s phraseology manual, in addition to possible uses of plain language in regular or emergency situations while flying.

The fact of counting with this resource will benefit all the educators who may be in charge of teaching Aviation English at ESMA, especially military personnel, because there have been cases in which the duties as Air Force Officers interfere with the responsibilities they also have as ESMA instructors. Therefore, with the implementation of the proposed

platform teachers would be able to complement classes with virtual activities as well as to assign contents that include tasks that cadets can solve autonomously.

This proposal is an advantage for learners who present difficulties during the module, since the instructor could upload extra exercises or information related to a specific field of Aviation in order to help students catch on with the learned material in class.

This research benefits not only learners and instructors, it also contributes to the educational mission that ESMA has in the training process of military pilots. International requirements concerning Aviation English proficiency would not be a barrier for future officers when flying internationally because with the implementation of this proposal cadets will be prepared to pass the ICAO's examination established to obtain the Operational Level 4 license, which would enable them to fly according to national and international regulations.

Objectives

General Objective:

- To design a blended learning Aviation English course at ESMA based on the requirements for national and international flights.

Specific objectives:

- To adapt the current teaching methodology of the Aviation English module to ESP approaches suggested by the ICAO for Language Proficiency.
- To design e-learning activities on an online platform bearing in mind the six skills that ICAO evaluates.
- To organize synchronous, asynchronous and face-to-face assessment moments along the ESP program.

Blended learning design for Aviation English at The Military School of Aviation "Cosme Renella Barbato" (ESMA)

In the following pages it is described the methodological approach proposed to encounter the teaching-learning situation al Aviation Military School in Salinas.

In Figure 12, it is presented the global view of the methodology chosen with general activities to be conducted in online and face-to-face sessions by teachers and students. Figure 13 includes the instruction model scheme which was developed to have a general idea of the interaction of students and teachers for describing when each activity arises, and when a new cycle starts.

Finally, Figures 14 and 15 include two lesson plans, developed with objectives, resources, strategies and assessment designed for just one unit of the English for Aviation course.

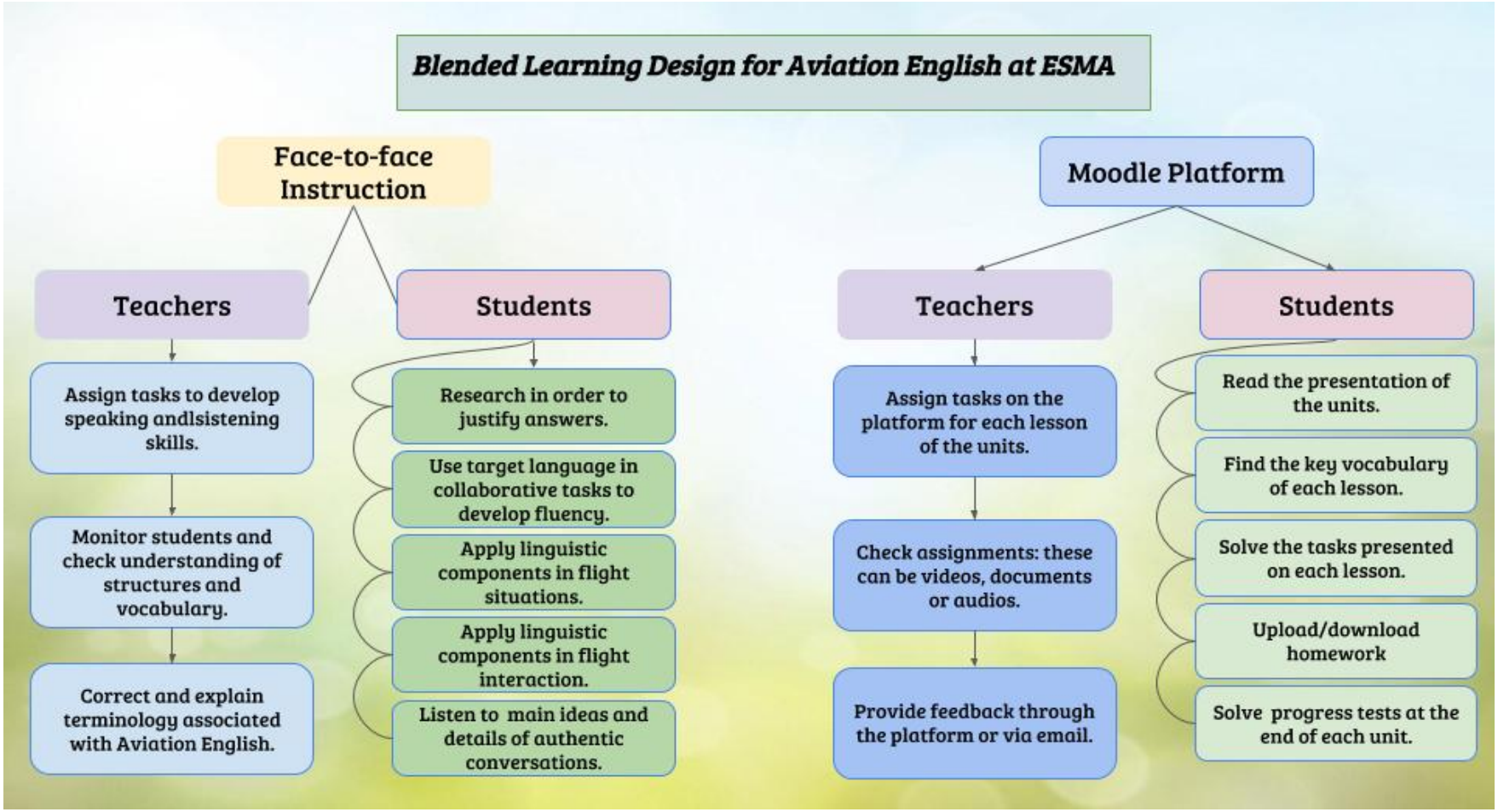

Figure 15. Mind map of Blended Learning Design

Instruction model

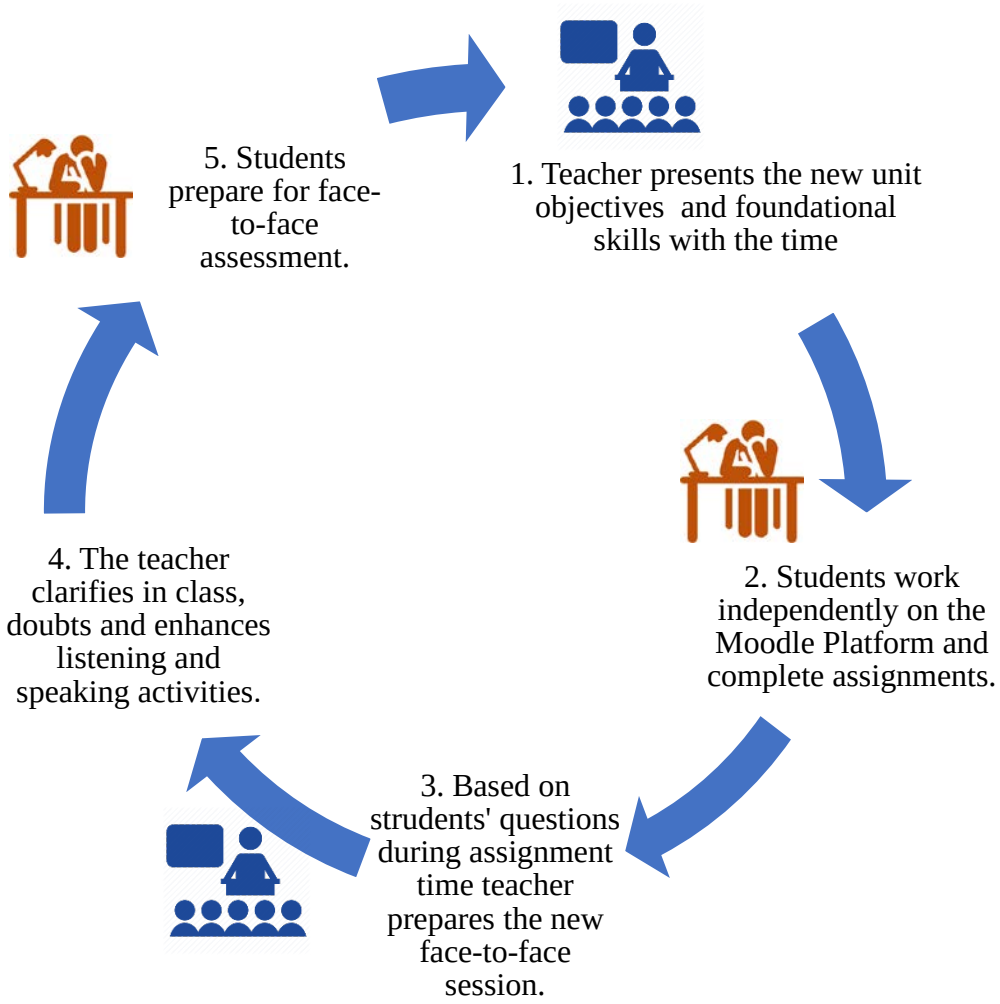

Figure 16. Instruction Model Scheme

Suggested Lesson Plans for the Aviation English module at ESMA

Figure 17 presents a suggested lesson plan based on the contents presented on the platform for unit 1, these topics were taken from the syllabus of ESMA's Aviation English module.

<table>
<tr><td colspan="2">Unit 1
Lesson 2</td><td colspan="2">Runway Incursion</td></tr>
<tr><td>Topics</td><td colspan="3">Avoiding Miscommunication:
Reading Skills
Vocabulary related to miscommunication
Asking for information</td></tr>
<tr><td>Objective</td><td colspan="3">To provide students with key vocabulary related to the routine messages exchanged between pilots and controllers for aircraft maneuvering on the ground.</td></tr>
<tr><td>Resources</td><td colspan="3">Face to face Session:
Worksheet
Laptops
Projector
ICAO´s Phraseology Manual
Digital resources:
Moodle Platform
H5P, application for the generation of exercises</td></tr>
<tr><td colspan="4">Methodological Process</td></tr>
<tr><td colspan="2">Face-to-face Session</td><td colspan="2">Online Instruction</td></tr>
<tr><td colspan="2">Presentation</td><td colspan="2">Presentation</td></tr>
<tr><td>Teachers</td><td>Students</td><td>Teachers</td><td>Students</td></tr>
<tr><td></td><td>Pair Work:</td><td></td><td></td></tr>
</table>

Provide articles related to miscommunication in Aviation.	Determine factors of miscommunication in Aviation.	Assign lesson 1 related to miscommunication in Aviation.	Read an article and mark the factors of miscommunication in Aviation.
Practice		**Practice**	
Teachers	Students	Teachers	Students
List the factors found on the texts by the students and play an audio based on miscommunication.	Listen to the conversation and analyze the ICAO's position regarding miscommunication.	Assign the written task 1 of lesson 1 on the platform.	Analyze the questions related to miscommunication and send the answers to the instructor.
Production		**Production**	
Teachers	Students	Teachers	Students
Ask students to listen to the audio again and make a list of the questions they hear. Explain structures using the examples of the audio.	Listen to the audio and take notes of all the questions related to asking for information. Analyze the structures used for asking for information in Aviation.	Assign the written task 2 of lesson 1 on the platform.	Complete questions related to asking for information.

Assessment		Assessment	
Teachers	Students	Teachers	Students
Ask students to create a similar situation using different locations. Act out the situation (One is the Pilot and the other is the Air Traffic Controller)	Create a similar situation like the one presented in the audio using different locations. Write the conversation and role play the situation (One is the Pilot and the other is the Air Traffic Controller)	Assign the written task 3 of lesson 1 on the platform.	Think about possible verbs which are used to ask for information and complete the conversation.

Figure 17. Suggested Lesson Plan 1

To have a better and clearer idea of the possible contents the platform can be supplied with another lesson plan is provided.

Figure 18 illustrates another suggested lesson plan based on the contents presented on the platform for unit 1- lesson 2. These topics were taken from the syllabus of ESMA's Aviation English module.

Unit 1- Lesson 2	**Runway Incursion**
Topics	Airport layout: • Listening Skills • Setting of controls for wind, use of rudders for directional control, kinds of airport signs and lighting, clearance instructions • Asking for information
Objective	To learn proper taxiing technique, and how to interpret airport runway markings and lighting, and ground clearances.
Resources	Face to face Session: • Worksheet • Laptops • Projector • ICAO´s Phraseology Manual Digital resources: • Moodle Platform • H5P, application for the generation of exercises • YouTube • Kahoot

Methodological Process			
Face-to-face Session		**Online Instruction**	
Presentation		**Presentation**	
Teachers	Students	Teachers	Students
Provide a short text related to taxiing in airports.	Pair Work: Determine what to taxi is according to what they read.	Assign lesson 2 related to taxying	Get an overview and explanation of taxiing with a video on YouTube.
Practice		**Practice**	
Teachers	Students	Teachers	Students
Write a list of dos and don'ts when taxying.	Identify which ones are the most common errors when taxying.	Assign the listening task 1 of lesson 2 on the platform.	Listen to the audio and complete the task Practice some vocabulary words on Kahoot
Production		**Production**	
Teachers	Students	Teachers	Students
Ask students listen again and make a list some of the airport signs they hear.	Listen and take notes of all the airport signs they hear.	Assign the listening task 2 of lesson 2 on the platform.	Complete the conversation about the correct taxiing and record your voices with a similar dialogue they create and upload to the platform (pair work)

Assessment		Assessment	
Teachers	Students	Teachers	Students
Ask students to answer some questions about taxying. For example: If Hanscom ground tells you to taxi to runway 23, can you cross runway 11/29, or do you need further permission to do that?	Answer the questions in pairs and explain their answers.	Assign the listening task 3 of lesson 2 on the platform.	Watch a video showing an incorrect way of taxying. After watching it write down the correct process and upload it to the platform for later correction.

Figure 18. Suggested Lesson Plan 2

Online Platform for the Aviation English module at ESMA

The pages to come state the planning of the proposal in terms of administrative-technical evolution of events. From the point of the educational project approach, this additional treatment is necessary since the proposed solution has a technical borrowed ingredient which is the digital implementation and future execution on an educational online platform.

After the administrative educational project is presented, it will be offered the second part which is the pedagogical approach: The Blended Learning Design for Aviation English at The Military School of Aviation “Cosme Renella Barbato”.

Technical Project Management

The project for implementation of a Platform for the Blended Learning Design for Aviation English at The Military School of Aviation “Cosme Renella Barbato”, takes its origins of the problems diagnosed on the research study conducted from November to December 2017 among students and the instructor of this institution, who were matter of analysis of chapter 4 from this research work. From the results gathered, certain needs were observed around Aviation English course, this project is going to offer the possibility of supporting the teaching-learning activities with a digital solution.

Objectives

Main objective

The main aim of this project is to organize the Aviation English course in an online platform considering the learning materials suggested by the ICAO manual.

Specific Objective

To implement learning materials for Aviation English at ESMA that match with standards and level 4 from ICAO manual.

Project Team

The project is going to be developed by the following participants who may have shared responsibilities which are listed in table 3:

Table 3
Responsibilities of participants

Team manager - researcher	This role could be played by the EFL pedagogue, since this is the most devoted role, and knows the problem in deep.
Technician on systems or multimedia	There is a need of technical decisions to upload material to the web. The technician is the one who is also going to observe the correct performance of the multimedia applications and the size of documents uploaded.
English as a Foreign Language Pedagogue	This role could be played by the researcher, for there are important considerations in term of teaching and learning methods and techniques to be applied through digital tools selected.

Project Planning

To each main problem or important ICAO suggestion, there is also a strategy to be implemented on the digital platform, from this it is derived a resource to be adapted presented on table 4.

Table 4
Project Planning

Problems found from research / important issues to consider from ICAO.	***Strategies***	***Resources***
The course materials include real life scenarios (must) Aviation English does not include tasks that improve fluency for radiotelephony operations Aviation English does not contain communicative strategies to exchange messages and to recognize and resolve confusions in aviation. ICAO phraseology manual and Ecuadorian Air Force Flight Manuals are the resources of the module. (must)	-Real life scenarios: aviation situations, visual aids -Tasks for improving fluency -Message drills -Listening activities with radio telephoning situations	-Audios of Radio telephoning conversations -Podcasts from broadcasts from air traffic control towers and radar facilities around the world. https://www.liveatc.net/ -Other English conversations for false beginners and intermediate students. http://engfluent.com/english-conversation-audio-free-download/

Planning and execution moments

In the planning phase, each task is assigned a reasonable amount of time along the weeks of every month. The starting point is November and the final moment when the project is presented to the authorities of the institution is April. The execution tasks are presented in a Gantt chart for an easier graphic understanding in figures 19, 20 and 21.

	Task I	Work Breakdown Structure	Planned Start	Planned Finish	In Charge
2	1	Diagnostic of the situation	2017-11-14	2017-12-12	Researcher
3	2	Planning the Blended Learning educational project	dic-13-2017	dic-20-2017	Reserch-Technician
4	3	Collect Audio of Radiotelephoning conversations	dic-21-2017	dic-27-2017	Resercher
5	4	Pedagogic evaluation of material	dic-28-2017	ene-5-2018	EFL Pedagogue
6	5	Collect Eembedded audios. and possible simulators	ene-8-2018	ene-17-2018	Resercher
7	6	Pedagogic evaluation of material	ene-18-2018	ene-24-2018	EFL Pedagogue
8	7	Design H5P interactive activities	ene-25-2018	feb-16-2018	EFL Ped-Reserch
9	8	Pedagogic evaluation of material and decisions	feb-19-2018	feb-23-2018	EFL Pedagogue
10	9	Select the platform to upload didactic material	feb-26-2018	feb-28-2018	Technician
11	10	Organize the Pilot Platform	mar-1-2018	mar-9-2018	Technician-EFL Ped
12	11	Pedagogic evaluation of the usability	mar-12-2018	mar-16-2018	Technician
13	12	Upload the material to the platform	mar-19-2018	mar-30-2018	Technician
14	13	Observe and evaluate constrains int he platform	abr-2-2018	abr-6-2018	Technician-EFL Ped
15	14	Turn in the project and digital material	abr-9-2018	abr-10-2018	Resercher

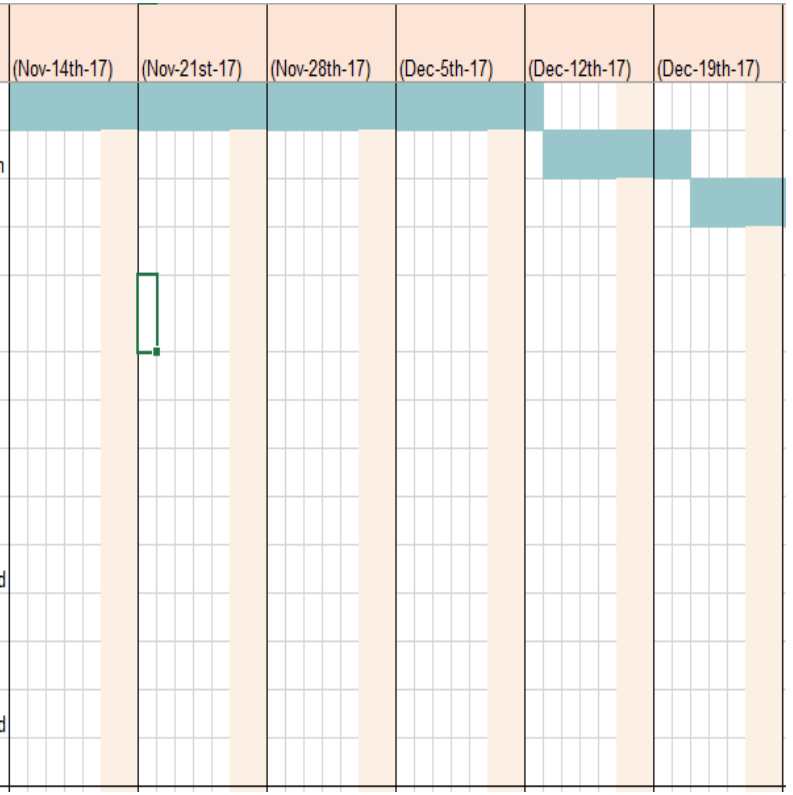

Figure 19. Planning and execution moments 1

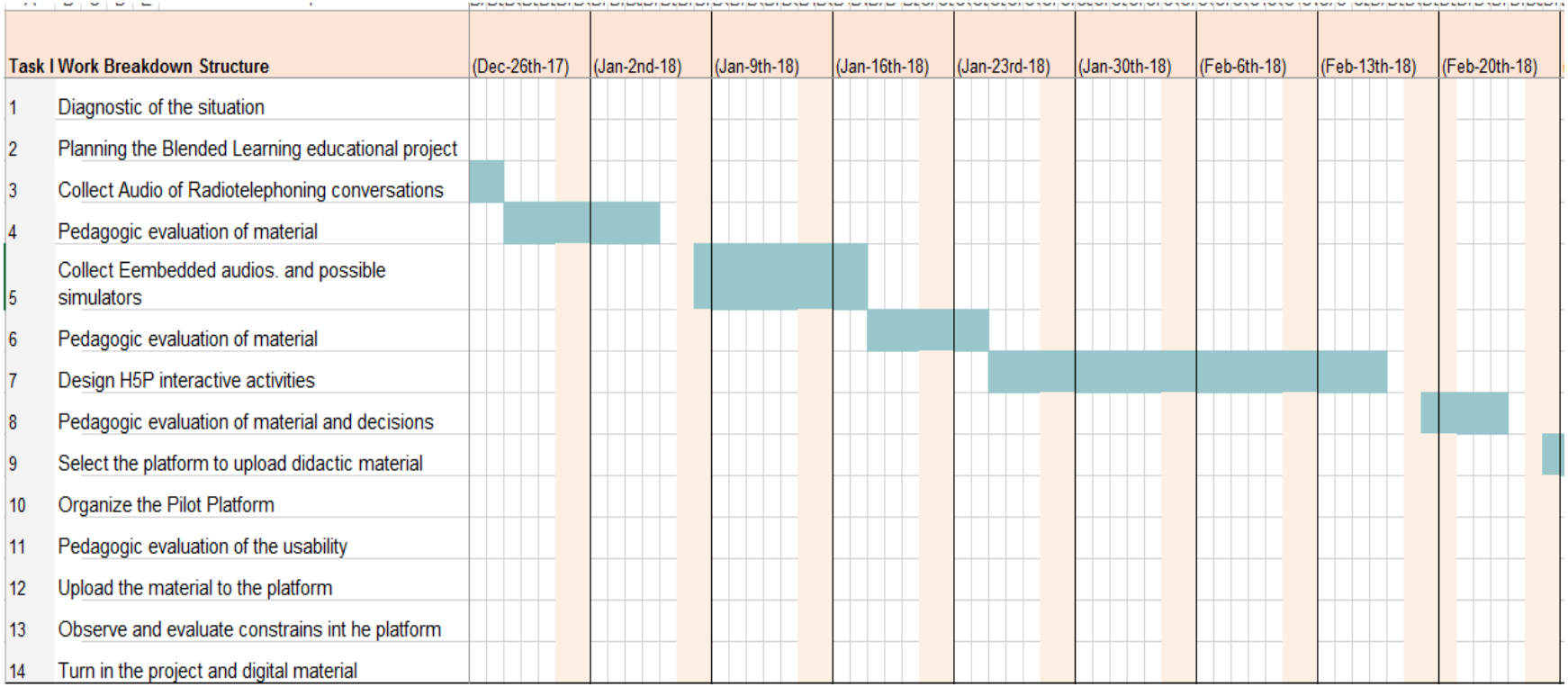

Figure 20. Planning and execution moments 2

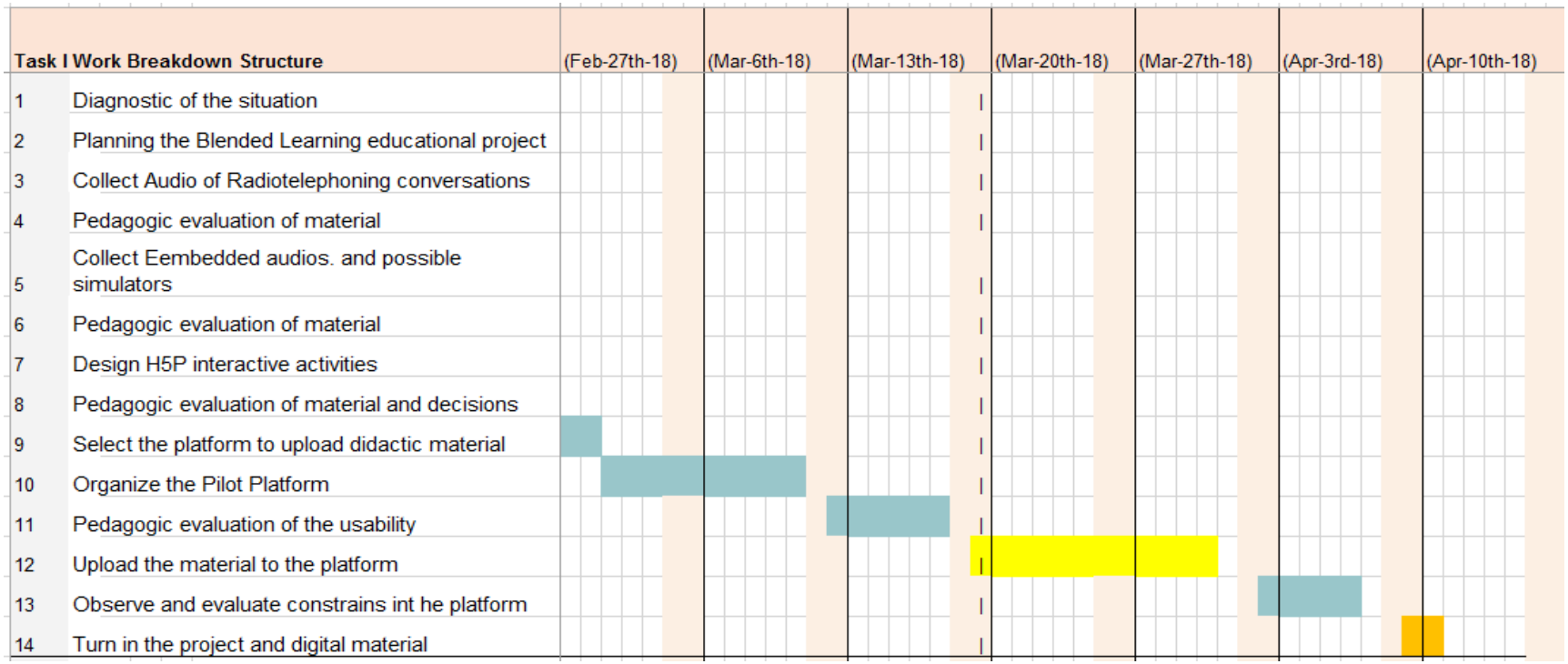

Figure 21. Planning and execution moments 3

Digital resources selected for the design

Moodle

Learning Management Systems (LMSs) are web applications which are run on a server and can be accessed through a web browser. LMSs provide educators with tools to design and implement learning programs in which students can be enrolled in order to solve tasks, upload or download material, chat or have class discussions, as well as give quizzes or record grades (Singh, 2015).

Modular Object-Oriented Dynamic Learning Environment (Moodle) is a flexible open-source which can be adapted to different learning needs and it is available in more than 100 languages (Singh, 2015).

In the work of Kareal and Klema (2006) some LMSs were compared focusing on particular features like user friendliness and possibility of adaptability, and the results proved that Moodle is preferred by most institutions because it is practical and can be customized according to educational necessities. Liao, Chen and Chen (2011) analyze the implementation of a Moodle course at a university and discovered that students believed that Moodle e-learning platform is a resource easy to understand and useful for communicational purposes. Plus, it offers a discussion area, allows collaborative and individual work which makes the process of learning more interesting.

Web server

To implement a Moodle site, it is needed to have a domain, which is the name of the website. It allows users to have access (Moodle, 2018). As this is the pilot of a proposal for educational purposes, it was chosen a free hosting server. Nevertheless, once the platform is implemented it will be required to count with a robust hosting server which in most of the cases has a price.

The proposed platform was developed using Dot TK (.tk). This organization has the objective of implementing a network of companies or people that need webpages. To provide a free domain name that represents a short, practical and secure option is part of their mission statement. This organization is oriented to projects on the Islands of Tokelau in the South Pacific (DOT TK, 2018).

Google Slides

Google Slides is an editor of presentations in the Google Docs and Drive productivity suite which will be also used for the creation of the platform. These slides are visible in a linear form. Transitions and effects are available as well. The presentations can be edited in real time, shared with contacts, and they are on the drive of the Google account which is been used (Google, 2018).

H5P

H5P is an open-source that allows web designers to create, share and reuse interactive materials like: videos, presentations or tests (H5P, 2018). This software will be used in the development of tasks for the Aviation English course at ESMA. It will enable learners to check the answers of an activity. A score will be given, and they can also have the option to see the solution of exercises.

YouTube

YouTube is a website for uploading and sharing videos (YouTube, 2018). This site also allows users to rate, report and comment on videos. Some videos related to Aviation English were included as extra material for further practice.

Simulation Games in the teaching learning process

Simulation can be defined as an imitation of an existing system, process, etc., that seeks to improve or ratify current problems in a particular situation (Bandyopadhyay &

Bhattacharya, 2014). Simulations can offer the learners a pretty much real experience in which the pupils must be completely involved.

According to Hertel & Millis (2002), the students feel more interested and conscious of the topic and function since they are actively participating. Hence students can develop leadership skills and solve problem easily. Plus, the learning environment created in class is much better and productive because the learners will be able to solve real-world problems. Simulation helps knowledge to be more efficiently transferred. Additionally, the pupils can be capable of learning how to think critically in any situation (Brumfield, 2005).

A simulation game is a game, which simulates a real-world situation that helps students make decisions. While playing these sorts of games, players will work cooperatively and work in teams without harming themselves or spend tons of money (Riis, 2016).

The Online Platform

The online platform, which is proposed in this work, will help to improve the methodology applied in the Aviation English module at ESMA. The designing process is explained in the following pages as well as the resources used for its implementation. The platform for the Aviation English module at ESMA was designed using Moodle application keeping in mind that cadets will be able to be familiarized with the format easily.

It is important to mention that students will be provided with a username and a password to log in the first time they have access to the platform. There is a brief presentation of the objectives in each unit of the courses available on the site. Figure 22 presents the site home page in which students will have to select the module according to the level in which they are enrolled.

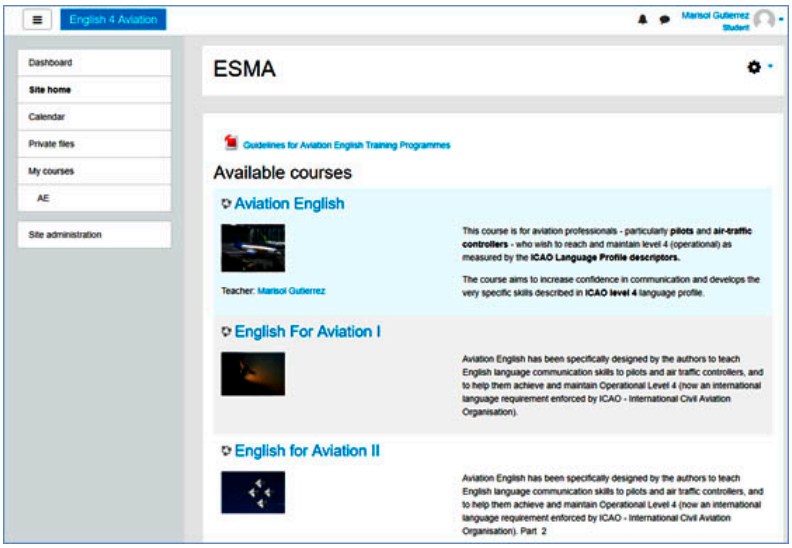

Figure 22. Site home page

Logging on: To have access to the platform, first it is necessary to go to URL, which has been designed especially for this purpose. The instructor has to type on any browser the following: *http://english4aviation.tk/* and click on the top-right button ***log in.*** Second, it is necessary to introduce a username and a password previously created. Finally, click on ***log in*** again to start using the platform as illustrated on figures 23 and 24.

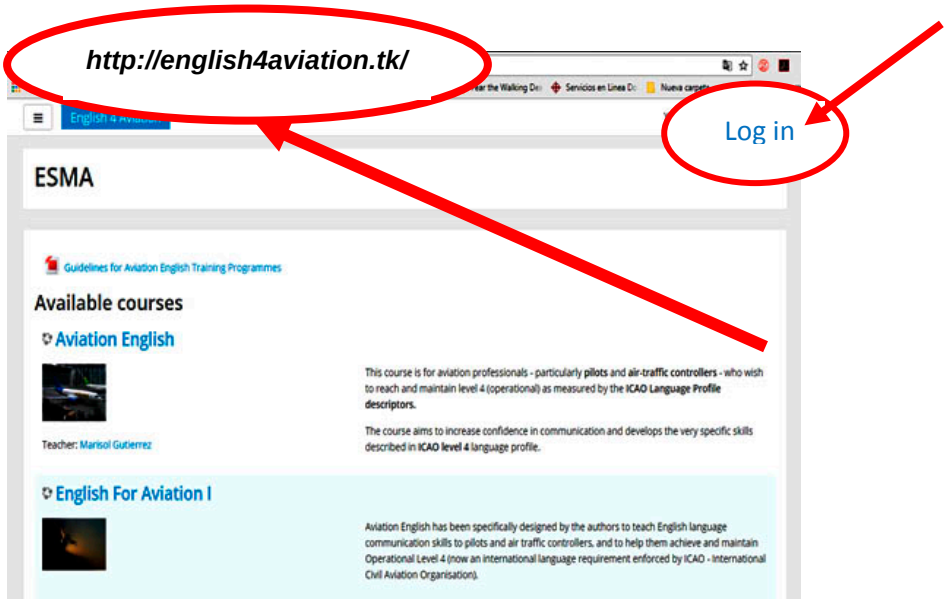

Figure 23. Platform's Log in Process

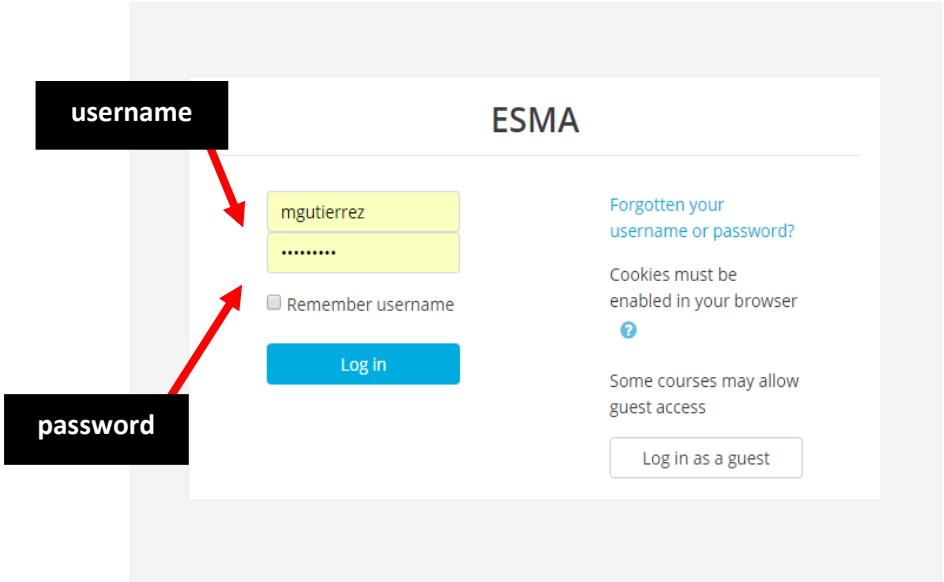

Figure 24. Username and Password

Once the students have selected the course in which they are enrolled, the units of the module appear in grids. Each unit covers different topics related to aviation and there are different options for students to see assignments, grades, forums and other resources available. It is important to mention that students must solve all the tasks of a unit to have access to the next section. As it is illustrated on figure 25, the ICAO's guidelines for Aviation English Training Programs are also available for all the participants of the course.

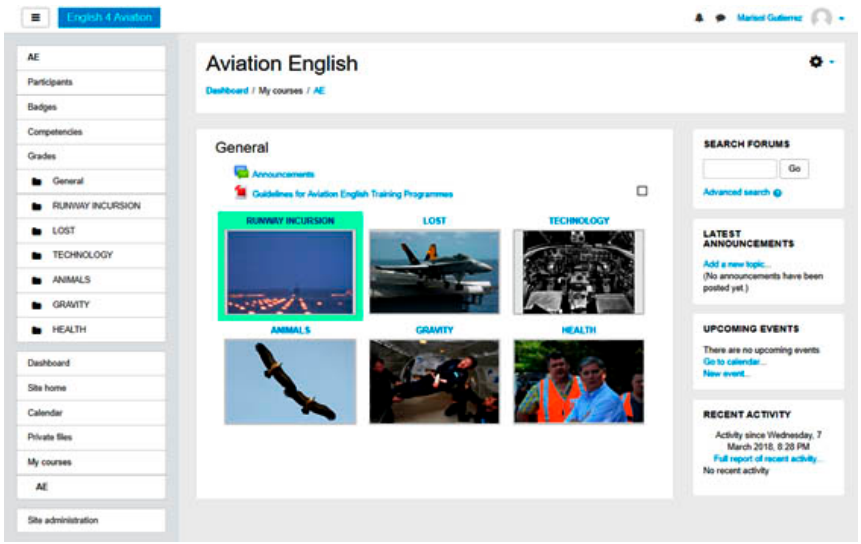

Figure 25. ICAO´s guidelines for Aviation English Training Programs

Each unit starts with a short explanation related to the four lessons that are displayed on the platform. These presentations are prepared using Google Slides. Relevant information regarding the most significant parts of the unit is presented on these slides. Students have to read to activate prior knowledge to be able to understand what the instructor will explain in classroom sessions afterwards.

As it is illustrated in Figure 26 and 27, presentations enable learners to have a perspective on what they are about to study.

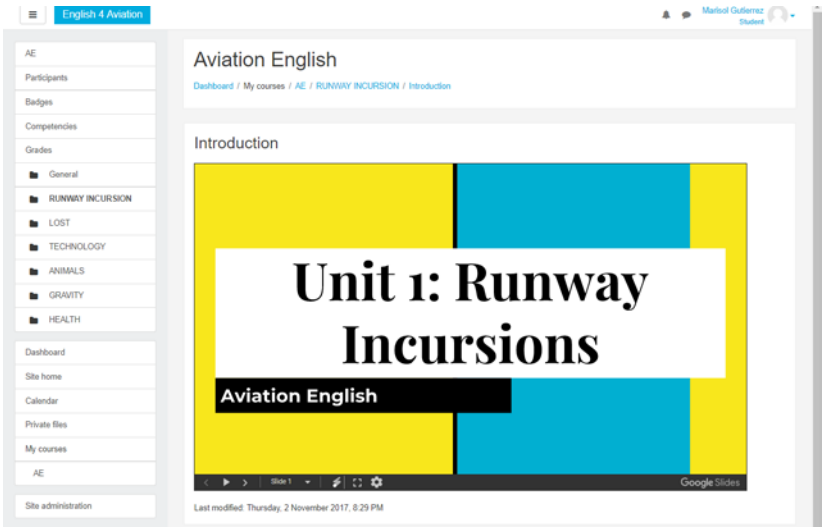

Figure 26. Google slides used for unit presentation

Presentations include the language skills with the new vocabulary.

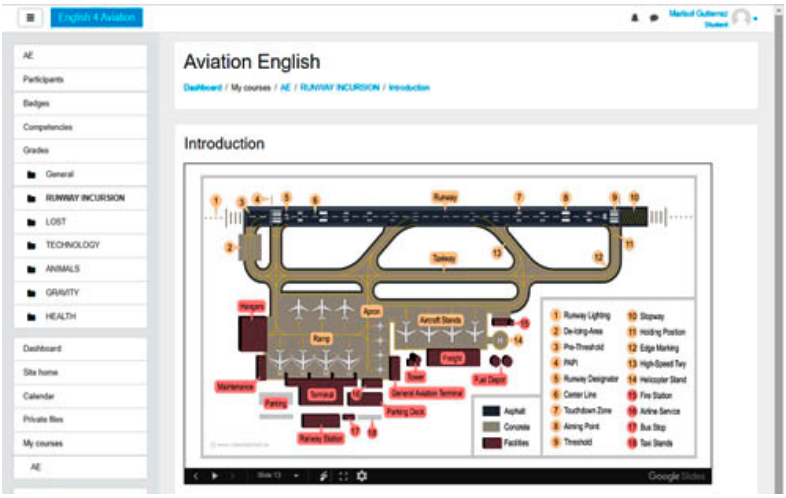

Figure 27. Presentation of Unit 1

Each unit contains four lessons in which there are tasks that students will have to work individually or in groups. Each activity included on the platform is intended to develop the necessary skills to reach the ICAO's Operational International level 4. Figure 28 presents the introduction of the first lesson.

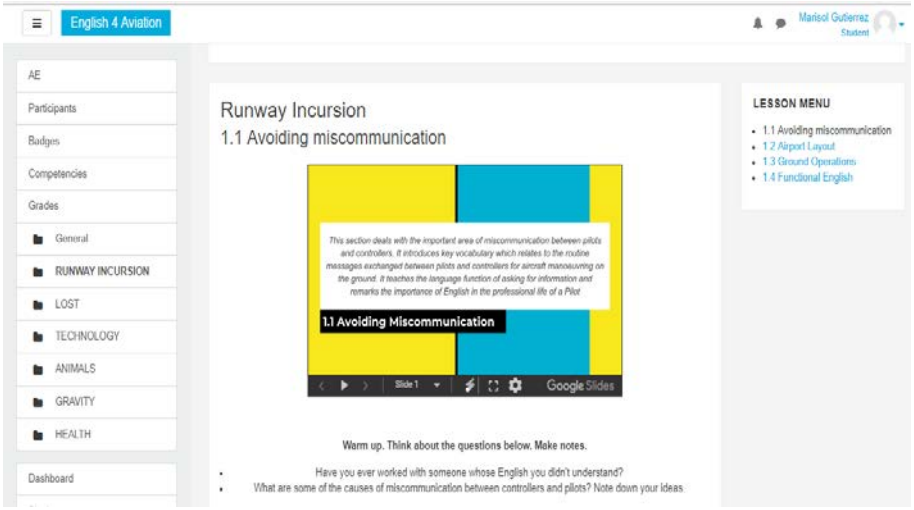

Figure 28. Presentation of the lesson 1, Unit 1

Instructors are allowed to make the necessary changes on the platform as it is presented in figure 29.

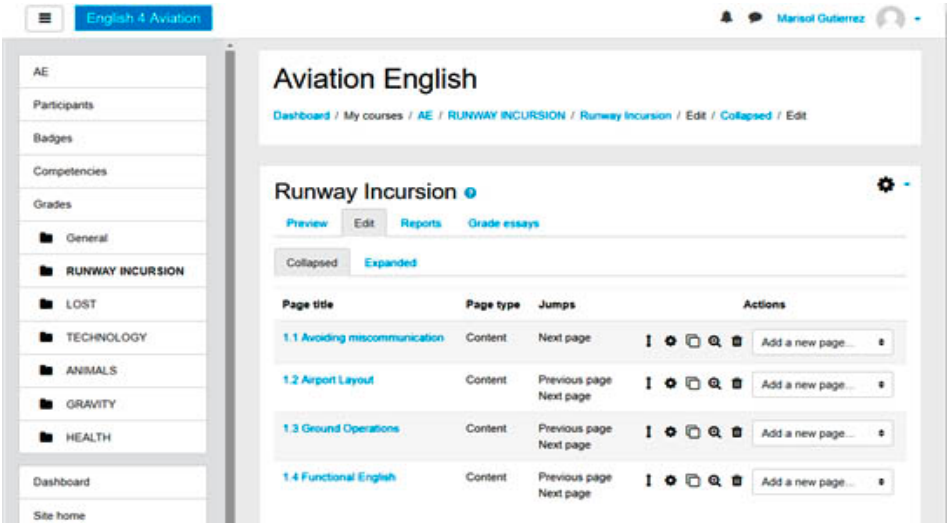

Figure 29. Modifications on the platform content

Assessment. Most of the tasks are graded and the answers are presented. This autonomous practice can be carried out by students around the topics that pupils consider difficult to understand. It is shaped to attain the different individualities of students and as a way of reinforcement with additional exercises to be completed on their own. One example is shown on figure 30.

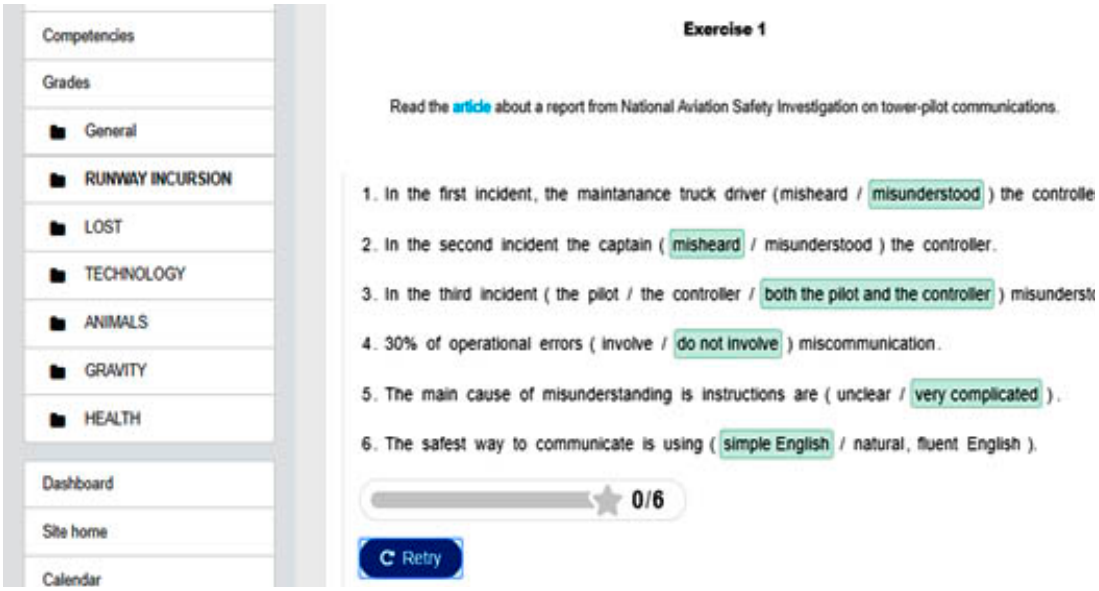

Figure 30. Assessment on the platform

Speaking skills can be anticipated by using the platform, students can do some research to justify the answers given in class. The role of the instructor is fundamental in the development of fluency, accurate selection of terminology and interaction with the students. As it is illutrated on figure 31, there are different ways of motivating students to investigate in order to acquire appropiate aviation terminology.

Figure 31. Speaking tasks on the platform

Audios for listening skills practice can also be uploaded. These audios are part of the material available at ESMA's flight department. Figure 32 illustrates how the listening exercises are presented on the platform.

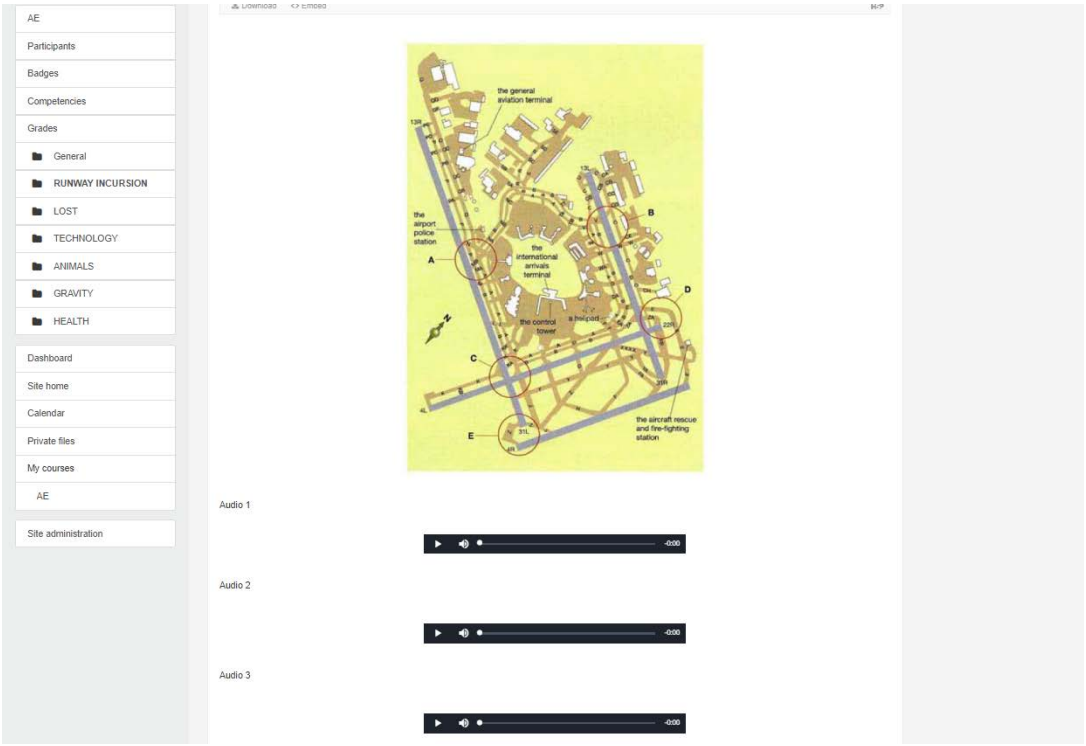

Figure 32. Listening Skills tasks on the platform

The possibility of adding extra material for further practice is also part of the platform. This can be presented in the form of audios or videos. One challenge that students of aviation must face is the correct pronunciation of English words and expression so as to avoid misunderstandings that could cause flight accidents. Bearing this in mind, it was also

considered the addition of pronunciation drills as for perfectioning the use of language. It must be remembered that speaking is a skill to be monitored during face-to-face sessions. The example presented on figure 33 is related to the pronunciation of the ICAO Radiotelephony Alphabet.

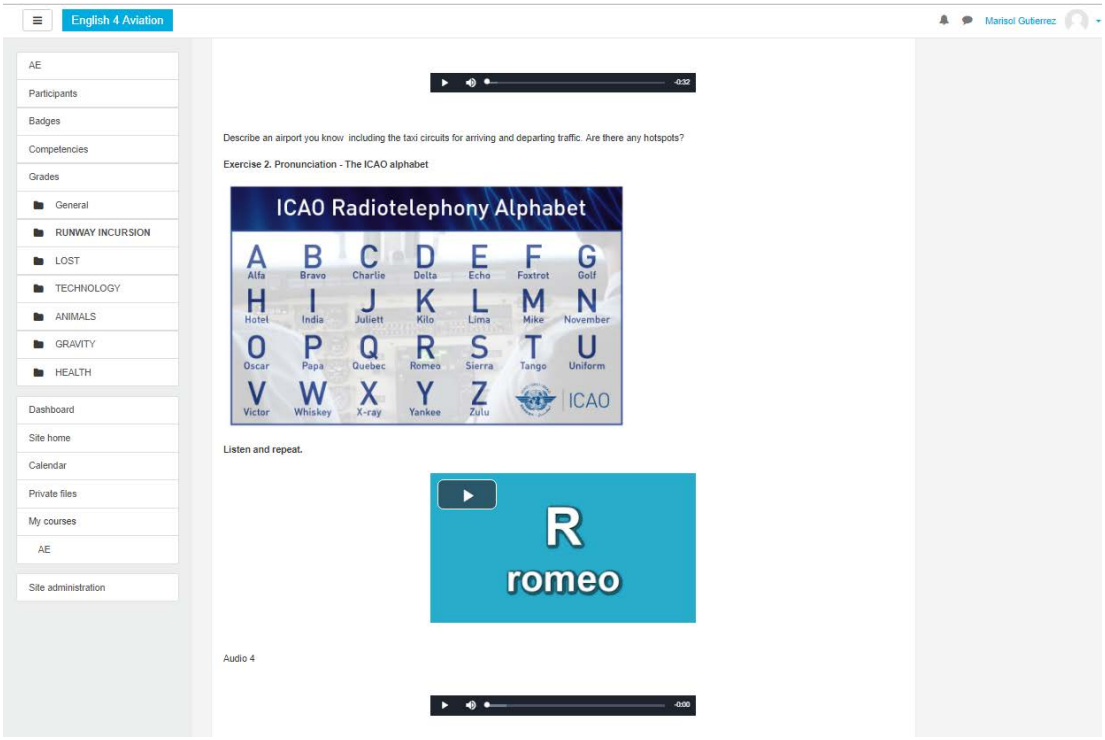

Figure 33. Extra material for Pronunciation

The final section of each unit includes a test that is part of the grades presented on the platform for each level. It evaluates the most relevant aspects and presents a complete report of the mistakes as well as the solution of the test. Figure 34 illustrates the evaluation of unit 1.

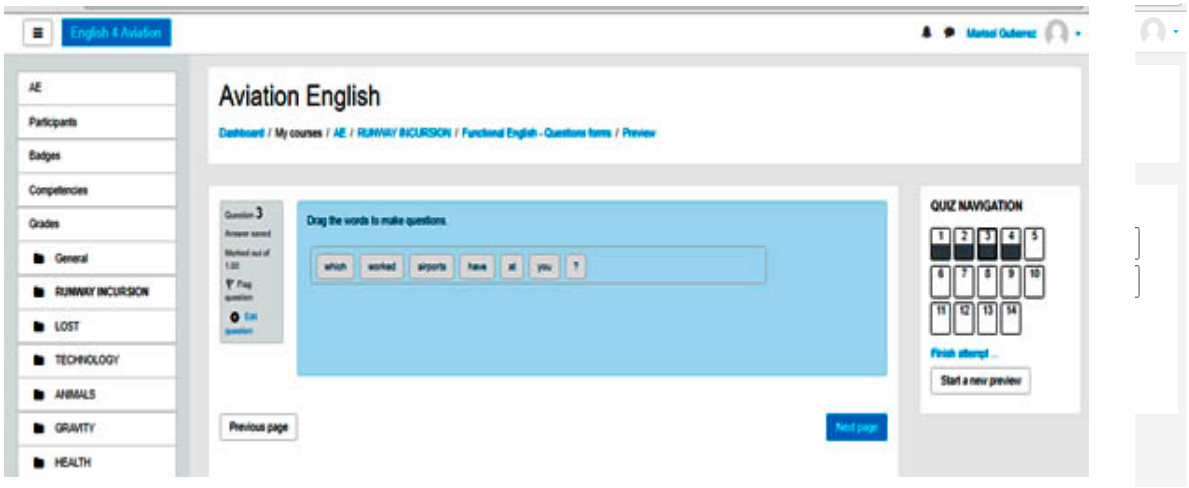

Figure 34. Evaluation of unit 1

This platform may be adapted to the Moodle web server that ESMA has for other subjects. The web address of the proposed platform for the Aviation English module at ESMA is ***english4aviation.tk***, it is shown on figure 35.

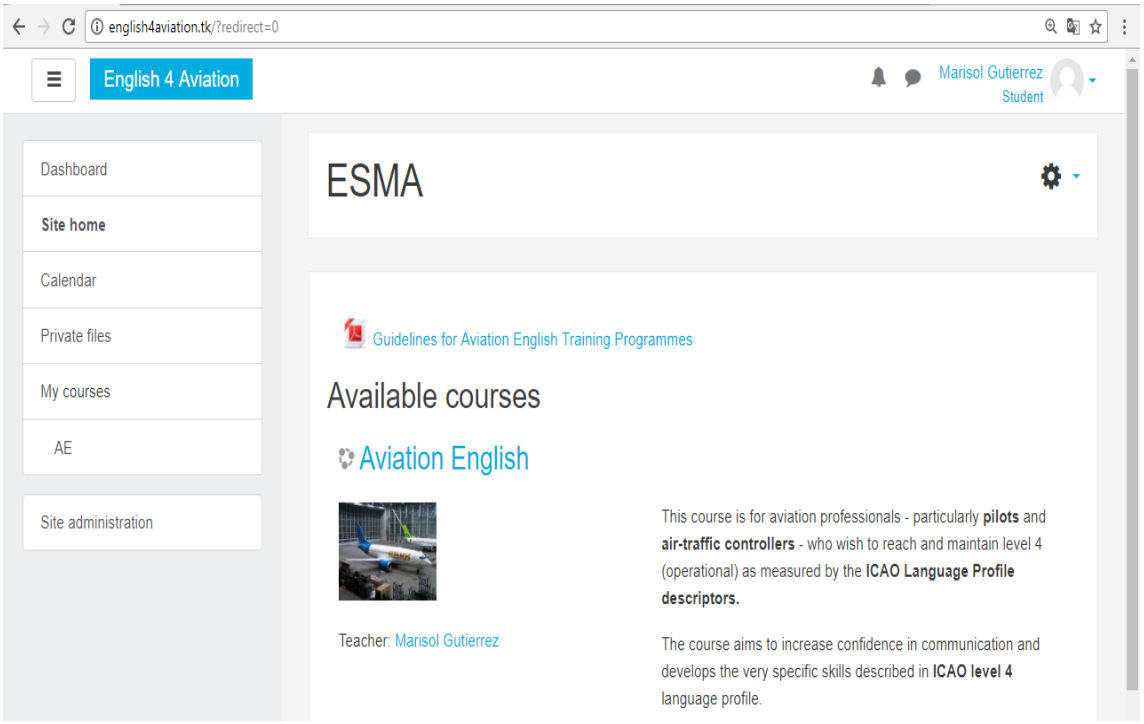

Figure 35. The web address of the platform

The exercises included on the platform were done using the web application H5P. This is a free and open-source content collaboration framework used to generate, share and reuse interactive audio-visual resources, including evaluations. All the material that is created may be imported and exported. Figure 36 provides an example of this type of content.

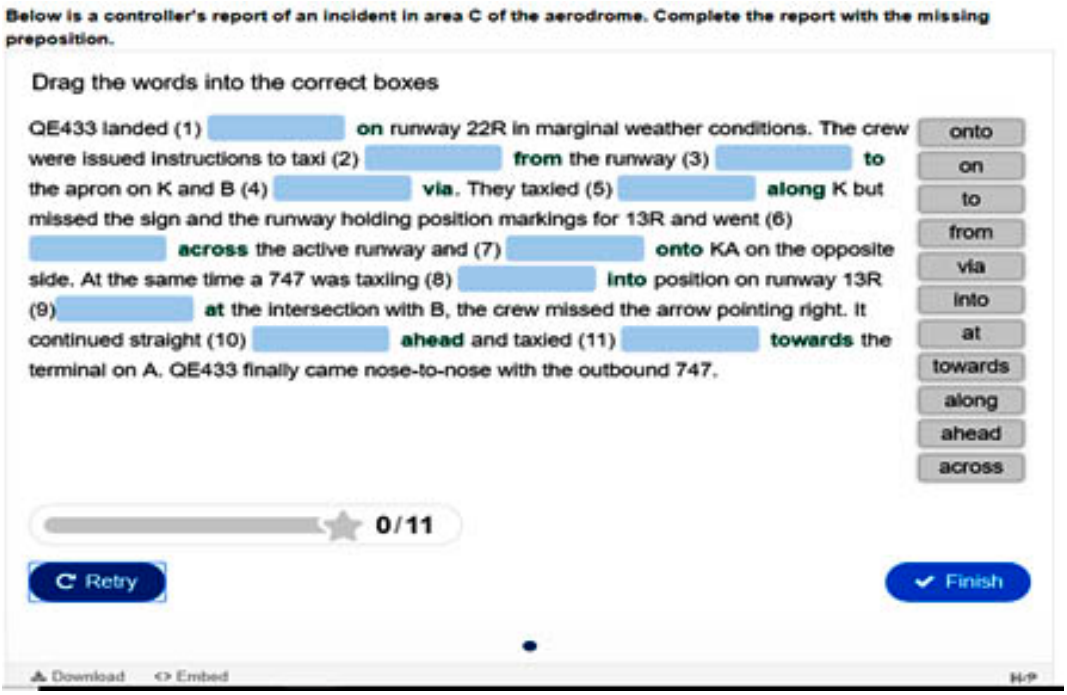

Figure 36. Example of tasks developed on the web application H5P

H5P application was selected for this work because it allows to design and implement exercises in short time. It can be considered as an efficient content editor because most of the tasks were created according to the parameters needed for this ESP course. The reusable resources that can be found on the libraries of the website contributed to the results obtained regarding exercises in all the lessons presented on the platform. The opportunity of solving tasks more than once is useful in the process of acquiring the lexicon of a specific field, as it is illustrated on figure 37.

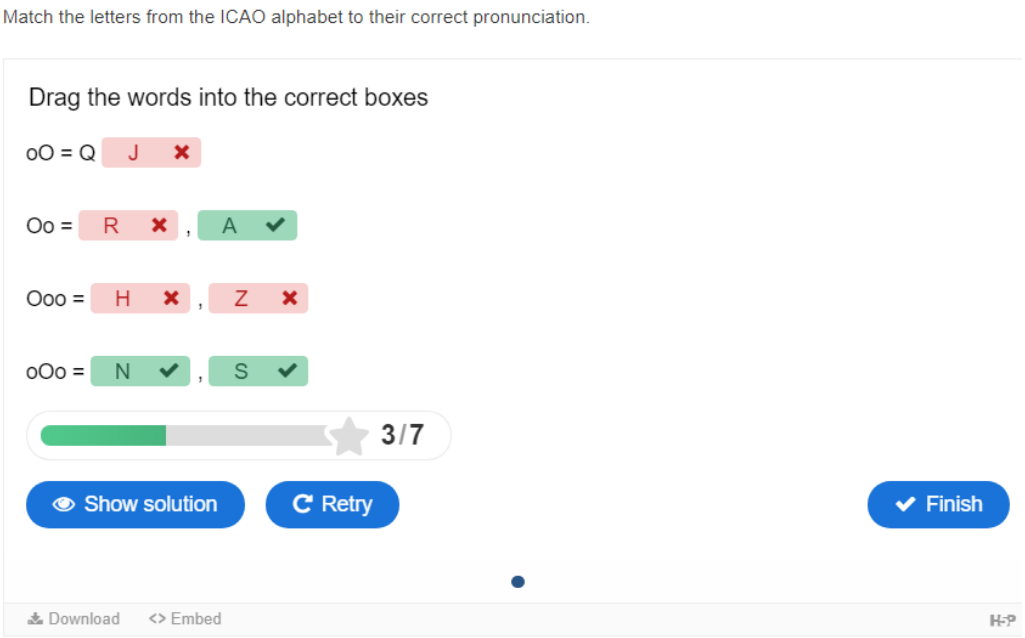

Figure 37. Example of tasks developed on the web application H5P

Monitoring and evaluation

It is highly recommended that after the implementation of the platform there must be selected two moments for monitoring the performance of the platform. These two evaluation points in time are going to generate feedback that could determine new strategies for reinforcing any weak parts found on the blended methodology supported by the online platform.

This two moments must be chosen by the instructor, managing the academic calendar, giving the project manager and technician enough time to develop effective corrections before the Aviation English course ends.

After its implementation, it is planned a global evaluation after a year of activity. As the monitoring moment, this will result in new decisions over the methodology and the platform.

Recommendations

There are some recommendations which must be taken into consideration before implementing the proposed Blended learning design at ESMA.

The instructor assigned to teach the module of Aviation English at ESMA must receive at least forty hours of training in order to familiarize with the necessary teaching techniques required for Blended Learning courses.

The instructor assigned to teach the module of Aviation English at ESMA as well as cadets must receive the necessary training in order to recognize:

- The process to log in for the first time
- How to solve or assign tasks
- How to upload additional material
- How to use all the learning resources available on the platform

The educator and the cadets must establish an adaptation period before officially beginning with the use of the platform.

During the adaptation period, a mock exam of Aviation English proficiency should be included as a diagnostic test to recognize the level at the beginning of the course.

The instructor must monitor the completion of tasks as well as the grades obtained by the cadets during each unit of the course.

Instructors are free to design and upload more material if there is the need to have further practice of a topic in particular.

There should be an English coordinator that checks the syllabus and lesson plans in order to make suggestions related to teaching strategies applied in the module.

Cadets must be familiar with the ICAO's Language Proficiency manual to understand the relevance of all the topics included on the platform.

As the final evaluation of the module, a mock test of aviation may be implemented on the platform to recognize the level at the end of the course.

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Appendixes

Appendix A: Aviation English Mock Test

UNIVERSIDAD CATÓLICA
DE SANTIAGO DE GUAYAQUIL

Facultad de Artes y Humanidades
Maestría en Enseñanza del idioma Inglés como lengua extranjera

Aviation English Mock Test

Please read the questions carefully and circle your response, you can only select one answer.

1. Section one: Fluency

Circle one sentence from options A to C that best describe the photo.

a) De-icing is taking longer than expected.
b) De-icing finished more than 10 minutes ago.
c) Singapore 107 is still waiting for de-icing to start.

a) The apron is covered with snow and ice.
b) The apron is covered with slush and water.
c) The apron has been cleared once, and is wet in some places.

a) Heavy fog has made visibility really bad.
b) Snow isn't a problem today and visibility is good.
c) Visibility is not very good, because of some blowing snow.

a) The snowploughs probably won't be needed today.
b) The snowploughs are working on clearing the snow again.
c) If the weather becomes worse, the snowploughs will need to get to work.

Circle one sentence from options A to C that best describe the photo.

a) The weather will probably change and it'll be foggy tomorrow.
b) It's been like this for two days, and we expect the bad weather to continue.
c) We had some clouds and rain last week, but the weather has been great since last Saturday.

a) They finished boarding ten minutes ago.
b) They've been boarding for about ten minutes.
c) They expect to start boarding in about ten minutes.

a) They need a push-back tug.
b) The push-back tug is standing by.
c) They'll push back as soon as the tug arrives.

a) They had a delay, but the fog cleared.
b) There may be a delay until the fog clears.
c) Fog is expected later but they can leave before it comes.

2. Section two: Comprehension

Listen to Audio 1: Circle the best way to complete each statement.

1. The pilot is ...
   a) asking for more time.

Listen to Audio 2: Circle the best answer to each question.

5. Who has a radio problem?
   a) The tug
   b) Ground

b) explaining a problem.
c) requesting information.

2. The pilot thinks there may be a problem with…
a) documentation.
b) the weight of his load.
c) weather-related delays.

3. Ground says that ...
a) there isn't a problem.
b) the aerosols may be a problem.
c) he needs to check with Customs.

4. The pilot is ...
a) in mid-flight.
b) preparing to land.
c) preparing for departure.

c) Lufthansa 158

6. What does KLM request?
a) a push-back tug
b) a change of stand
c) a maintenance truck

7. What is Lufthansa 158 doing?
a) taxiing
b) holding
c) loading

8. Why does Lufthansa 158 want a different stand?
a) His stand is blocked.
b) He's worried about the time.
c) He has a sick passenger on board

3. Section three: Interactions

Circle the best response to each question or statement.

1. Did the bird strike cause any damage?
a) Yes, it did.
b) No, it won't.
c) Yes, they do.
d) No, it doesn't.

2. We need services to remove this unruly passenger from the plane.
a) No, we won't.
b) Over there, near the door.
c) OK, the police will meet you.
d) Negative. Everything's fine here.

3. Are you on stand D45 or D54?
a) D45.
b) No, we aren't.
c) I've got it here.
d) Yes, it's on D45.

4. We're having trouble with the nose gear.
a) How long will it take?
b) Is that absolutely necessary?
c) Do you want to come in for a low pass?
d) Are you sure that's what you want to do?

5. Can we have more time?
a) You do.
b) Not for long.
c) It's 1430 now.
d) I can give you 20 minutes

6. I want to check a load today.
a) Yes, we can.
b) No, he didn't.
c) OK, go ahead.
d) Yes, I think so.

7. What's the problem?
a) It's right over there.
b) We've tried everything.
c) There's plenty of time, don't worry.
d) There's some jet blast damage just behind the threshold.

8. We've just had a near miss with some vehicles near the end of the runway.
a) Not today.
b) Yeah, we saw.
c) That's the one.
d) It's over by the terminal.

9. How long can I expect to wait?
a) Right now.
b) No, you won't.
c) Since yesterday.
d) Half an hour, at least.

10. We have a passenger with severe chest pain.
a) Is there?
b) At what time?
c) Can he move it?
d) Is it a really crushing pain?

Section four: Structure

Circle the best words to complete each sentence.

1. Can someone …. the chocks, please?
a) move
b) moved
c) moving
d) to move

2. ….. the weather improved?
a) Do

6. If it …., we'll be delayed.
a) rain
b) rains
c) to rain
d) raining

7. Did you …. to set the QNH?
a) remember
b) remembers
c) remembered
d) remembering

b) Are
c) Has
d) Have

3. We're …. unload the plane.
   a) will
   b) going
   c) won't
   d) going to

4. …. passengers allowed in this area?
   a) Is
   b) Do
   c) Can
   d) Are

5. After we …. the signboard, we realized our mistake.
   a) pass
   b) passed
   c) to pass
   d) passing

8. As soon as we …. the noise, we knew there was a problem.
   a) hear
   b) heard
   c) have heard
   d) were hearing

9. Would you ….me to check with your company?
   a) like
   b) likes
   c) liked
   d) had liked

10. The newspaper …. that this was the third incident this month.
    a) say
    b) said
    c) report
    d) to report

Section fo: Structure Vocabulary

Circle the best word to complete each sentence.

1. There are two planes in **….** of you.
   a) next
   b) front
   c) above
   d) behind
2. Is there a **….** with the tanker?
   a) stop
   b) break
   c) damage
   d) problem
3. There's something **….**with it.
   a) break
   b) delay
   c) wrong
   d) problem
4. A snowplough is used for getting **….** of compacted ice.
   a) Rid
   b) out
   c) away
   d) remove
5. The situation is under **….** .
   a) clear
   b) solve
   c) control
   d) serious

6. Pilots **….**to get clearance for flight plans.
   a) have
   b) must
   c) should
   d) allowed

7. We're **….**stand C65.
   a) in
   b) to
   c) on
   d) for
8. Did the tug break **….**?
   a) in
   b) back
   c) over
   d) down

9. If I can keep **….**this speed, we won't be late.
   a) up
   b) for
   c) into
   d) until
10. Can we delay departure **….**2000 UTC?
    a) at
    b) for
    c) until
    d) because

Note. Adapted from Express Series English for Aviation for Pilots and Air Traffic Controllers (2008), Oxford University Press, Photocopiable Resources. Content available on the official webpage: https://elt.oup.com/student/express/avi/?cc=ec&selLanguage=en

Appendix B: Cadets' Survey

UNIVERSIDAD CATÓLICA
DE SANTIAGO DE GUAYAQUIL

Facultad de Artes y Humanidades
Maestría en Enseñanza del idioma Inglés como lengua extranjera

Survey

Please read the questions carefully and put a cross (X) in front of your response, you can only select one answer.

1. The module of Aviation English at ESMA fulfills the needs of a Pilot.

Strongly agree	Agree	I don´t know
Disagree	Strongly disagree	

2. Do you know what ICAO is, and which are its functions in Aviation?

Yes	No	Somewhat

3. Are you familiar with the Manual on the Implementation of ICAO Language Proficiency Requirements?

Yes	No	Somewhat

4. The content of the module of Aviation English at ESMA is similar to the ones mentioned in the ICAO's manual of Language Requirements

Strongly agree	Agree	I don´t know
Disagree	Strongly disagree	

5. Are you familiar with the ICAO Rating Scale for Language Proficiency in Aviation?

Yes	No

6. Do you know what the content of Operational Level 4 from ICAO consists of?

Yes	No

7. Do the learning activities of the Module of Aviation English include real life scenarios?

Yes	No

8. Do the activities in the module of Aviation English help you understand the use of technical vocabulary for flight operations?

Yes	No

9. Does the module of Aviation English include tasks that improve fluency for radiotelephony operations?

Yes	No

10. The evaluations of the module of Aviation English include communicative strategies to exchange messages and to recognize and resolve misinterpretations in aviation.

Strongly agree	Agree	I don´t know
Disagree	Strongly disagree	

11. The tasks performed on the computer are useful in the process of acquiring the lexicon needed for flight operations

Strongly agree	Agree	I don´t know
Disagree	Strongly disagree	

Thank you very much.

Note. Adapted from "A Needs Analysis of English for Specific Purposes (ESP) Course For Adoption Of Communicative Language Teaching", by Samira Atefi Boroujeni & Fateme Moradian, 2013

Appendix C: Flight Instructor Interview

UNIVERSIDAD CATÓLICA
DE SANTIAGO DE GUAYAQUIL

Facultad de Artes y Humanidades
Maestría en Enseñanza del idioma Inglés como lengua extranjera

Interview to the Flight Instructor

Please read the questions carefully and circle your response, you can only select one answer.

1. Which degree do you have?

Bachelor's in English	Master's degree in English
c. Other, please specify _____	

2. Do you have another activity in the Flight Department or in any other dependency at ESMA?

Yes	No

3. If your answer is "YES", please specify where and what are your functions.

Where?	Functions:

4. Have you taught any other subjects at ESMA?

Yes	No

5. If your answer to question 4 is "YES", please specify which.

Which?

6. Have you had any specific training in the teaching of English as a foreign or second language?

Yes	No

7. Briefly, describe the methodology applied in the module of Aviation English.
_____
_____
_____

8. In the current course, you usually concentrate more on:

General grammar notions	Grammar structures related to Aviation
Vocabulary needed for flight operations	Phraseology Manual only

9. During your present teaching, you use:

An Aviation English textbook	ICAO´s manuals
Ecuadorian Air Force flight manuals	Own material

10. Do you use any Information and Communications Technology (ICTs) tools in the module of Aviation English?

Yes	No

11. Do you meet teachers of the Flight Department to discuss and comment the contents of the Aviation English Module?

Yes	No

12. Do you think that computer-based tasks could improve the process of learning Aviation English?

Yes	No

Thank you very much.

Note. Adapted from "Meeting Students' Needs: An Analysis of ESP Teaching at the Department of Computer Science", by Dakhmouche Farida Rosa, 2008.

Appendix D: COMPLETE ICAO's Rating Scale

LEVEL	PRONUNCIATION *Assumes a dialect and/or accent intelligible to the aeronautical community.*	STRUCTURE *Relevant grammatical structures and sentence patterns are determined by language functions appropriate to the task.*	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTIONS
Expert 6	Pronunciation, stress, rhythm, and intonation, though possibly influenced by the first language or regional variation, almost never interfere with ease of understanding.	Both basic and complex grammatical structures and sentence patterns are consistently well controlled.	Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced, and sensitive to register.	Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, e.g. to emphasize a point. Uses appropriate discourse markers and connectors spontaneously.	Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties.	Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues and responds to them appropriately.
Extended 5	Pronunciation, stress, rhythm, and intonation, though influenced by the first language or regional variation, rarely interfere with ease of understanding.	Basic grammatical structures and sentence patterns are consistently well controlled. Complex structures are attempted but with errors which sometimes interfere with meaning.	Vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work-related topics. Paraphases consistently and successfully. Vocabulary is sometimes idiomatic.	Able to speak at length with relative ease on familiar topics but may not vary speech flow as a stylistic device. Can make use of appropriate discourse markers or connectors.	Comprehension is accurate on common, concrete, and work-related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events. Is able to comprehend a range of speech varieties (dialect and/or accent) or registers.	Responses are immediate, appropriate, and informative. Manages the speaker/listener relationship effectively.
Operational 4	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation but only sometimes interfere with ease of understanding.	Basic grammatical structures and sentence patterns are used creatively and are usually well controlled. Errors may occur, particularly in unusual or unexpected circumstances, but rarely interfere with meaning.	Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work-related topics. Can often paraphrase successfully when lacking vocabulary in unusual or unexpected circumstances.	Produces stretches of language at an appropriate tempo. There may be occassional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction, but this does not prevent effective communication. Can make limited use of discourse markers or connectors. Fillers are not distracting.	Comprehension is mostly accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies.	Responses are usually immediate, appropriate, and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deals adequately with apparent misunderstandings by checking, confirming, or clarifying.
Pre-operational 3	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation and frequently interfere with ease of understanding.	Basic grammatical structures and sentence patterns associated with predictable situations are not always well controlled. Errors frequently interfere with meaning.	Vocabulary range and accuracy are often sufficient to communicate on common, concrete, or work-related topics, but range is limited and the word choice often inappropriate. Is often unable to paraphrase successfully when lacking vocabulary.	Produces stretches of language, but phrasing and pausing are often inappropriate. Hesitations or slowness in language processing may prevent effective communication. Fillers are sometimes distracting.	Comprehension is often accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. May fail to understand a linguistic or situational complication or an unexpected turn of events.	Responses are sometimes immediate, appropriate, and informative. Can initiate and maintain exchanges with reasonable ease on familiar topics and in predictable situations. Generally inadequate when dealing with an unexpected turn of events.
Elementary 2	Pronunciation, stress, rhythm, and intonation are heavily influenced by the first language or regional variation and usually interfere with ease of understanding.	Shows only limited control of a few simple memorized grammatical structures and sentence patterns.	Limited vocabulary range consisting only of isolated words and memorized phrases.	Can produce very short, isolated, memorized utterances with frequent pausing and a distracting use of fillers to search for expressions and to articulate less familiar words.	Comprehension is limited to isolated, memorized phrases when they are carefully and slowly articulated.	Response time is slow and often inappropriate. Interaction is limited to simple routine exchanges.
Pre-elementary 1	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.

Figure 38. ICAO's Rating Scale. Taken from "Manual on the Implementation of ICAO Language Proficiency Requirements, Doc 9835" by ICAO, 2004, p. A-7,8.

Appendix E: Interview to the Flight Instructor

The interview took place at ESMA's Flight Department, the military instructor in charge of the last module of Aviation English kindly answered all the questions and also gave his opinion regarding the need of having Pilots able to reach the Operational English level established by the ICAO.

Question 1: Which degree do you have? (a) Bachelor's in English, (b) Master's degree in English, (c) Other, please specify _____

Answer: The instructor explained that he has a Bachelor's degree in Aeronautical Sciences, in addition, it was mentioned that he was chosen to teach this subject because he took some courses to pass the ICAO examination.

Question 2: Do you have another activity in the Flight Department or in any other dependency at ESMA?

Answer: The instructor explained that even though he was assigned to the Flight Department, as a Military Officer, he also has to cooperate in some other activities at the school.

Question 3: If your answer is "YES", please specify where and what are your functions. Where? Functions:

Answer: He also works at the Academic Department and is in charge of teaching some military subjects.

Question 4 & 5: (4) Have you taught any other subjects at ESMA? (5) If your answer to question 4 is "YES", please specify which.

Answer: Yes, he was the responsible of teaching Military Mapping, Military Symbology and Internal Defense.

Question 6: Have you had any specific training in the teaching of English as a foreign or second language?

Answer: He does not have any training in teaching English, however, he has some experience with the ICAO English training courses and because of time he has not been able to take the official examination.

Question 7: Briefly, describe the methodology applied in the module of Aviation English.

Answer: As time is the main problem in the military life, the instructor explains that all the teaching strategies applied in class are based on drills and grammar translation. The resources are: the ICAO phraseology manual and the manual of the aircraft with which the cadets will learn how to fly.

Question 8: In the current course, you usually concentrate more on: (a) General grammar notions; (b) Grammar structures related to Aviation; (c) Vocabulary needed for flight operations; (d) Phraseology Manual only.

Answer: As it was previously mentioned, the resources of this module are: the ICAO phraseology manual and the manual of the aircraft with which the cadets will learn how to fly; therefore, the course is more focused on vocabulary needed for flight operations.

Question 9: During your present teaching, you use: (a) An Aviation English textbook(b) ICAO's manuals, (c) Ecuadorian Air Force flight manuals, (d) Own material.

Answer: The instructor explained that the ICAO phraseology manual and Ecuadorian Air Force Flight Manuals are the resources of the module.

Question 10: Do you use any Information and Communications Technology (ICTs) tools in the module of Aviation English?

Answer: The instructor thinks that ICTs represent the most important tool that a teacher has nowadays, especially in the aviation world. Online activities are assigned during the module, however, not all of them are appropriate.

Question 11: Do you meet teachers of the Flight Department to discuss and comment the contents of the Aviation English Module?

Answer: The officer in charge of the Aviation English module is the one who decides what to teach, subsequently, there is no need to have meetings.

Question 12: Do you think that computer-based tasks could improve the process of learning Aviation English?

Answer: Based on his personal experience of attending an Aviation English course, the instructor considers computer-based tasks are the best choice for this kind of courses.

DECLARACIÓN Y AUTORIZACIÓN

Nosotros, Gutiérrez Santos, Marisol Edith, con C.C: # 0923130561 y Almeida Pacheco, Victor Alfonso, con C.C: # 0926535196 autores del trabajo de titulación: Enhancement of the English for Specific Purposes Methodology applied at an Aviation Military School in Salinas previo a la obtención del título de **Magister en Enseñanza de Inglés como Idioma Extranjero** en la Universidad Católica de Santiago de Guayaquil.

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Guayaquil, 17 de mayo del 2018

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RESUMEN/ABSTRACT (150-250 palabras):

The purpose of this research is to analyze the Methodology of an "English for Specific Purposes" (ESP) Aviation course used for flight operations and Radiotelephony operations at Escuela Superior Militar de Aviación "Cosme Renella Barbatto" (ESMA) in Salinas, Ecuador. The analysis of this research was both quantitative and qualitative; hence, the design for this research is a mixed method approach. The instruments used to obtain the collected data were a mock Aviation English test, an interview for teachers, and a survey for the students. For this study, fifteen pilot cadets of first year were considered as well as the aviation English module instructor. Teachers and students' perceptions towards the Aviation English module were monitored, observed and analyzed.

The results of this research showed that some aspects regarding the Methodology of the Aviation English module taught at ESMA must be improved since not all the cadets were familiarized with ICAO's Language Proficiency Requirements manual or The ICAO Standardized Phraseology manual.

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